NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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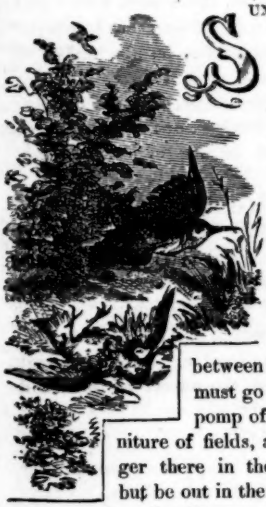
SOME THINGS ABOUT JUNE.

Everything is happy now,
Everything is upward striving;
'Tis as easy now for the heart to be true,
As for grass to be green or skies to be blue—
'Tis the natural way of living.—*J. R. Lowell.*



SUMMER is come, and JUNE, the month of Roses, and everywhere, about our feet in the fields, flocks of wild flowers "do paint the meadows with delight."

To make the contrast still more striking between the seasons, one must go forth amid "the pomp of groves and garniture of fields, and not only linger there in the declining *day*, but be out in the freshness of the morning, when the flowers are opening their leaves to the sun, and when field and grove are vocal with the concerts of birds.

The two grand husbandry occupations among our English neighbors in June, are the Hay-harvest and the Sheep-shearing. One of their writers has charmingly described the latter. Sheep-shearing, he says, if not so full of variety as the Hay-harvest, is more lively, animated, and spirit-stirring; and it besides retains something of the character of a rural holiday—which rural matters need, in this age and in this country, more than ever they did since it became a civilized and happy one. The sheep-shearings are the only *stated* periods of the year at which we hear of festivities, and gatherings together of the lovers and practicers of English husbandry. * * * Now then, on the first really summer's day, the whole flock being collected on the high bank of the pool formed at the abrupt winding of the mill-stream, the sheep are, after a silent but obstinate struggle or two, plunged headlong, one by one, from the precipitous bank; when, after a moment of confused splashing, their heavy fleeces float them along, and their feet guide them towards the opposite shallows, that steam and glitter in the sunlight. Midway, however, they submit to the rude grasp of the relentless washer; which they undergo with as ill a grace as preparatory school boys do the same operation. Then gaining the opposite shore heavily, and shaking their streaming sides, they go bleating away towards their fellows on the adjacent green, wondering within themselves what has happened!

How natural this picture, and how many will be carried back to boyhood days, to the old mill and its plashing stream, or the little pond improvised for the occasion by a temporary dam of stakes and slabs! To the boys—

and to the girls too, who had not to enter the water—this was rural felicity indeed; and the duckings, races after an escaped sheep, or—the rogues,—perchance after one of the fair spectators, and the songs and jokes of the occasion, make our American scene vie with the jollities of our English brethren. Then,

"If verdant elder spreads
Her silver flowers; if humble daisies yield
To yellow crow-foot, and luxuriant grass,
Gay shearing-time approaches."

JUNE is a hot month, and if the season is at all a dry one, more than usual attention will be required by the growing plants. On grounds that were wet in May, and where the surface had become crusted and hard, the cultivator and hoe ought frequently to be in use. If some suitable implement could follow the cultivator, on such land, that would break the lumps and reduce them to a light and fine condition, the plants would be greatly benefited. The compact surface prevents the ready descent of rain into the soil, so that too much of it runs off from the surface, and its enriching influences are lost. A hard surface also prevents the airing of the soil. This airing is as important to vegetable growth as the rain water, and if the soil is deprived of it, its plants will soon indicate it by a sensible change in their color, and a feeble growth. Many crops are materially diminished from this cause.

On higher and more dry lands, the same implements ought to be in frequent use for several reasons. If they are not of a highly fertile character, it is still more essential that their surface should be frequently moved. A soil that lies lightly and fine has innumerable open spaces for the admission of air, the descent of rain water, and especially the capabilities to take up the dews that rest upon it, and are thus watered whenever dew is deposited. All soils, also—excepting those of a decidedly sandy character—need frequent stirring to increase their depth. When they are porous and light far down, all the atmospheric influences can act upon them, so that they become fertilized beneath. Plants growing upon the surface soon become aware of this, for they certainly have the power of selection, and send their roots down indefinitely in search of fertilizing agents, and especially in search of moisture, if the season is a dry one.

In order to secure strong and thrifty crops, it is all important that this special care should be given them, especially during the latter part of June.

Plants or flowers in the garden may be greatly helped in dry seasons, by watering them once or twice a week. But when done, it should be plentifully done. Use a watering pot, and imitate nature as closely as possible, by pouring on the water in small streams, and giving it time to penetrate the soil instead of running off into lower places. Continue the watering until the soil about the plant is thoroughly saturated, and then leave it for a week, unless the drought is quite severe. Of course, this cannot be done to any great extent, but a favorite rose, a mass of portulaccas or a bed of verbenas or heliotropes may be sustained, and made to blossom in unusual profusion and beauty. Where water is plentiful and at hand, even the beds of onions, carrots, beets and parsnips, may be kept thriftily growing, until the heavens are opened and showers descend. With the aid of a simple pump, short hose and sprinkler, this watering may be profitably extended to the pea patch, celery, young cabbage plants, tomatoes, cucumbers, lettuce and beans. We have seen gardens thus preserved in the highest luxuriance in the midst of scorching drought all around them. But this would be at too much cost, unless the water were stored up in cisterns, or the garden were located upon the border of some living stream.

As we may fairly count upon hot and dry weather in our New England climate, it is well to anticipate it, and make whatever provision is economical to prevent its destruction of the crops; just as we anticipate the coming of the canker worm, and take measures to prevent his coming too far. One of the best preventives against the effects of heat and drought, is that of

MULCHING.—This may be done in various ways. A coat of old, fine muck thrown over the surface, around favorite plants, operates finely. Refuse hay, straw, leaves, or small bushes, will answer an excellent purpose. One of the best illustrations of this occurred on the farm of ASA CLEMENT, Esq., a well-known nursery man in Dracut, and at present a member of the Massachusetts State Board of Agriculture. On a piece of land where he found it convenient that his cattle should run for a

portion of the summer, there were many young apple trees which had sprung up from seeds dropped by the cattle. These were pruned up as high as they would bear, to prevent the animals from browsing on them, grafted, and such branches as were cut from them, and the bushes that grew in their vicinity cut down, and all thrown around the base of the tree, and covering a space from six to eight feet in diameter. The principal motive in this was to keep the cattle from rubbing against the trees. But the result in another respect was highly beneficial. The branches not only kept the cows from disturbing the trees, but they caught and held the leaves that fell from themselves in the autumn, and arrested other leaves that were flying before the wind. These retained the moisture, and the whole mass, gradually decaying, gave a thrift and vigor to the trees that we have rarely seen surpassed.

Many gardens are located upon sandy loams which quickly feel the want of moisture. In such places many valuable plants may be kept in a growing state through the pinch, so that later rains will perfect a crop.

THE MILLET CROP.—Most milk producers, and, indeed, most farmers in all this region, find it difficult to feed their cattle as they would like to, by the beginning of August. Their pastures are then dry, and the feed nearly or quite exhausted. Some have resorted to clover as a green crop, others to oats, and at a later period to Indian corn, wherewith to supply deficiencies of their pastures.

Millet has been found to answer an excellent purpose, and is now cultivated to a considerable extent. Its yield is large, its luxuriant leaves juicy and tender, and much relished by all kinds of stock. It is usually sown from the 10th to the 20th of June, using *eight quarts* of seed to the acre. Some persons use more seed than this. If sown thick, the straw of the crop will be finer and perhaps better for green fodder, but should not be thick enough to obstruct the rays of the sun from reaching all of it. The seed should be sown with great care, going both ways across the field with it, in order to touch all the ground and cover it evenly. Mr. John H. Powell, of Pennsylvania, says:—I have not seen, either in Europe or America, any green crop which so largely rewards accurate tillage and plentiful supplies of manure, as the species of millet usually grown in this and the adjacent counties. I have sown it from the 1st of May to the 20th of June, and have invariably obtained more fodder than could have been had from any grass under similar circumstances." On the 1st of May he sowed four acres, and on the fifth of July the crop was cured and estimated at *four* tons per acre. He adds:—"whilst my oxen consumed millet in its green state, they performed their work with more strength and vigor than they had done before, or have shown since, except when fed with grain. My cattle of all ages, prefer it to both red and the best white clover, meadow or timothy hay."

LETTING FARM IMPLEMENTS.

Fifty or sixty years ago the amount of money paid out by farmers for tools and implements was small, especially in the newer and rougher portions of New England. In our boyhood, which was passed on a new farm and in a new country, the iron and steel part of axes, ploughs, harrows, yokes, hoes, &c., were fashioned by the nearest blacksmith, while the wood work was supplied by the farmers themselves or by the carpenter. When carts were first introduced we well remember that only the wheels were purchased, the other parts being of home manufacture.

But all this is changed. Machines and implements of high finish and great cost are now made to facilitate almost every operation on the farm. To purchase all this machinery requires an amount of money altogether beyond the means of most small farmers. Hence in some cases neighborhoods join together in buying machines; in others individuals purchase threshing, stump-pulling and other machines and operate them as desired for individual farmers.

Another plan has been suggested, that of letting or renting tools by neighbors among themselves. We have recently received a little pamphlet, entitled "Rules and Regulations concerning the Letting of Tools. Issued by the Framingham, Mass., Farmers' Union, January 1, 1871." It contains an introductory note, a set of Rules, names of members, a "Charge List" and blanks properly ruled for keeping accounts with borrowers. The names of fourteen members of the club are given, with that of O. O. Johnson, M. D., as secretary. The prefatory note is as follows:—

Whatever may be the cause, expensive and efficient agricultural implements are not in common use. To purchase machinery capable of great results, an outlay is often incurred out of proportion to the profits of Agriculture. But a great variety of the best tools owned in New England communities, are worked to but a fraction of their capacity, although they are of vital importance to rural industry. No where else are they so much needed. Like money, farm machinery is locked in the strong holds of a few.

To release these implements and diffuse their usefulness, to place the best tools within the reach of every farmer, is the object of this Association.

The charge list is founded on business principles. Tools will not be let unless both parties are benefited. As all persons may be aided, we invite them to extend the usefulness of this system by adopting its methods.

Rules.

1. Lenders will exact care in the management of tools.
2. Hirers must pay for damage occasioned by carelessness; and damage shall be taken as *prima-facie* evidence of carelessness.
3. The time upon which a charge is based shall be estimated from the taking of the tool until the same is returned. Any part of a day shall for this purpose be regarded as a whole day, except as hereinafter provided.
4. Tools will not be let for a single day for a less sum than five cents.
5. Terms are strictly cash.
6. In all cases of disagreement between a hirer and the owner concerning a tool, the arbitrators of this Association shall decide, and their decision shall be final.
7. No member of this Association shall in any case allow his implements to be used on any other terms than those stated in the charge list of the Association, except it be for the purposes of charity.
8. All persons taking tools from any member of this Association shall be governed by these rules.

To indicate the rate of charge we copy a few articles from the long list given, with the rates per day, as we suppose, though that fact is not distinctly stated.

A bit, hand and cranberry rake, hay fork, hammer, &c., 5 cents; an axe, beetle and wedge, chains, flails, ladders, wheel-jack, &c., 10 cents; bitting harness, barley fork and hand saws, 15 cents; garden cultivator, dung fork, scythes, 20 cents; churn drills, gravel screen, root-pullers, one-horse hay wagon, one-horse plough, sleds, scrapers, tackle and fall, &c., 25 cents; corn sheller, hand cider-mill, &c., 30 cents; one-horse cart, two-horse hay wagon, two-horse plough, &c., 40 cents; two-horse carts, cradle, field seed sower, &c., 50 cents; fan mills, rail-way horse power, &c., 75 cents; power hay-cutter, two-horse ploughs, circular saw, potato planter, &c., $1; stump puller, $1.50; grain drill, $2; mowing machine, 50 cents per hour; hay press, $3 per day.

INSOLUBLE MATTER.—In criticising, some years ago, an analysis that some professed chemist had made of limestone, in which a portion of the ingredients were set down as "insoluble matter," Prof. S. W. Johnson said, "such exhibitions of professional folly may do for fifty years ago, but in this part of the nineteenth century we recognize no such substance as 'insoluble matter' in our nomenclature. In this same insoluble matter may be hid the very pabulum of vegetable life."

COTSWOLD AND MERINO SHEEP.—Mr. J. Harris, of Rochester, N. Y., bought last year Michigan Merino ewes that cost about $2.50 each, and a thoroughbred Cotswold ram. In his Walks and Talks, written March 21, for the *American Agriculturist*, he says that thus far, from twenty-six ewes he has had thirty-four lambs. Some farmers have thought that a cross between the large coarse wool sheep, either Leicester or Cotswold, was too violent, if not unnatural. But Mr. Harris believes that such is not the case, and says he does not desire better luck than he has had with these ewes and lambs, though he has fed no roots. He thinks the butchers will be willing to pay a good price for his lambs in May. Mr. Harris adds:—

"An English farmer who is staying with me, and who formerly kept some 300 breeding long-wooled ewes, was at first quite disposed to laugh at my Merinoes. But he is now quite converted. It is really amusing to hear him talk so enthusiastically about the motherly qualities and milk-producing capacity of these little Merino ewes."

EXTRACTS AND REPLIES.

HOW TO CLEANSE A FOUL WELL.—WILL CAUSTIC LIME DISSOLVE BONES?

Last summer a small well that supplied water to my buildings, dried up, and remained dry during the fall and winter. Early this spring I found there was some water in it, but on putting in a pole to ascertain its depth, I stirred up a strong smell which proved that a skunk was or had been in the well. Indeed so offensive was the smell that no one could hold his head for a moment over the well. I did not know what to do to purify the water, the surface of which I could see was covered with a bluish scum, and the scent was thus exceedingly disagreeable. By the advice of one neighbor I started to the village for some plaster of Paris to put into the well. The man who sells plaster also sells lime of his own burning, and he said lime was altogether the best for my purpose. I therefore took some of his lime, warm from the kiln, and like the man with his wife's bonnet, who was afraid the fashion would change before he got it into her hands, I hurried home with my steaming lime, fearing it would cool, and immediately put a peck or more of it still warm into the well, which caused a fine commotion in the water. It remained undisturbed four days, when finding that all the smell had been removed, the water was pumped and dipped out, and the bottom of the well thoroughly scraped and cleaned by a small boy,—the well not being large enough for the admission of a man. The boy said he did not notice any smell at all in the well, but on exposing the mud to the air I thought there was a perceptible odor. The water pumped out was so limy as to make our hands sore in handling it. I have thus learned a lesson in relation to purifying wells, which may be of some practical value to others as ignorant as I was on the subject. Several of my neighbors said it would take months to cleanse it.

But I wish to learn one thing more. Did the lime destroy the bones as well as the flesh of the animal which I suppose blundered into the well and caused the impurity I have described? We found some hair, but noticed no other animal remains. Did the lime decompose the bones? T. S. F.

Felchville, Vt., 1871.

REMARKS.—The question with which our correspondent closes his letter has been submitted to an experienced chemist who replies as follows:—

"When bones are treated with a dilute alkali (as potassa) the cementing material of the bone (gelatin) is dissolved out, and the bone crumbles to powder. I have no doubt that the same effect would be produced by caustic lime. I should sup-

pose that when you have got rid of the remaining lime, by pumping the well dry repeatedly, that no harm whatever would happen from the crumbled bones."

TREATMENT OF COWS AFTER CALVING.

The best thing to give a cow after calving is the milk first taken from the cow after the calf is dropped. If it is given to her warm, as soon as drawn, she will generally take it readily; but occasionally a cow will refuse it. We had one lately from which we milked two water pails pretty well on towards full, soon after the calf was dropped, but as usual with her, she refused to drink it. Taking a wooden quart measure that was at hand, we poured down a quart of it, every drop of which she dexterously managed to swallow. After taking a second one she pointed her attention to the pails, which being given her were greedily emptied of their contents.

We always allow the cow to eat the "cleaning" or afterbirth. However unnatural the appetite may be to the normal condition of the animal, we believe it indicates the wants of the cow at the time, and therefore should not be withheld.

HUNGARIAN GRASS AND CORN FODDER.

I fully agree with Mr. Sanderson as regards the value of Hungarian. Cut at the right time it is one of the best articles of fodder grown. Without proposing it as a substitute for corn, it possesses certain advantages of its own. It can be grown later than corn. I once raised an excellent crop after taking off a crop of late peas, about the 20th of July. Another lot of about four acres produced a very good growth, sown about the 12th of July. The lot was ploughed by odd jobs. The manure and labor at my disposal would not have raised corn fodder enough to have paid for the seed. This, too, with the disadvantage of a severe drought, which I think this plant stands better even than corn.

The saying of Dr. Loring, that corn fodder "is not worth anything," we always thought "rather steep" and at variance with the experience of dairymen everywhere. We may say this much, though we always regarded the Doctor as a pretty successful farmer, considering that with him everything has to be done by employees, which in these times of "labor parties," "strikes," high prices and a general disregard of everything not paid for and "on the bill," leaves a rather poor show for farm business, if it must be done by proxy. But that steep saying of the Doctor, "made up" as it seemed, becomes quite comprehensible after reading the experience of our friend Cheever. His cows would not eat well cured Hungarian or millet. He says his cows preferred to enjoy the society of their owner to eating that kind of fodder. Well, this might seem a little strange at first, but all true, no doubt. This case, like that of Dr. Loring's, is to be accounted for, no doubt, by some *strange eccentricity* on the part of the cows. Such things probably do happen sometimes. But if I had them I should probably make beef of both lots. AMERICUS.

Blue Hills, Mass., April 1, 1871.

AGRICULTURAL SOCIETIES AND FAIRS.

When abroad among our farmers I often find subjects upon which to offer some suggestions to your readers. It is so, also, when I am in the field. But I greatly rejoice for the advanced position of your prized paper. Twenty years ago your correspondents were few, compared with the present number of instructive writers who appear in your columns. Then, the high interest and pleasure I felt in the prosperity of a favorite journal, prompted me to put to paper every important item which I thought would add to its interest. But it is now, I am glad to see, quite beyond needing my contributions for its interest. Yet, for years past, many items have seemed to claim attention from my pen; but one unpleasant subject has always thrust itself to the top of my thinking, when I have been disposed to write for your paper. You have, to some extent, and well, discussed it in the past.

Many of the "Agricultural Societies" are so managed that honest farmers who know how things are done, not only have no confidence in them, but regard them with contempt. Not only is it true that the real farmers, in many of them, have only a secondary influence, but men who are only related to Agricultural Societies, as sucking calves are to a dairy, are forward as though they were all-over in the farming interests. I do not mean by this, such men as agricultural editors, &c. While agriculture, in a direct manner, feeds the world, or does most of it, it is made to feed, through its special agencies, too many perfect bloodsuckers of society. And while it is one of the noblest and most honorable and moral of occupations, I deem its high character as debased and insulted, when the official managers of its societies must be men who will make its fairs more attractive to gamblers and their kind than they are to the farmers and mechanics, more distinguished for moral virtues.

I have taken an active interest in such societies, when I could. But I have so often known the management of them to be in total disregard of moral right, and manly justice and fairness, that I have taken little active interest in them for years past. Instead of calling the fairs by such a name as an *Agricultural Fair*, many of them would more justly be called Horse Races, with characteristic accompaniments. The characters and inclinations of the men who manage the Fairs, reveal the class and kind of men who have assumed, or are put in the lead with the societies. The last time I acted on a committee of judges, at our State Fair, I was on two or more committees, and tried to act honestly. I know that in the awards rendered by those committees, or in their name, there was an entire perversion of honesty. I know that an expression of judgment, perfectly unanimous, was overruled, and a false award made, to please pet parties. I despise all such things, and I know that true interests are not to be promoted thus. I would be glad to see agricultural interests in the hands of farmers. A. G. COMINGS.

Lee, N. H., April, 1871.

REMARKS.—It is true that the correspondents of the NEW ENGLAND FARMER have largely increased during the past twenty years, and so have the number and length of our columns. While we feel proud of our new contributors, we cherish with a tender fondness the recollection of those who wrought well in the foundation work of the present prosperity of the FARMER. On referring to the volume for 1851, we find at least ten articles by our friend and co-worker, and we think that no year has passed without some evidence of his continued interest in his "favorite paper." May that interest and co-operation continue—we were about to write—another twenty years; but, alas, how few of us who were banded in 1851 can expect to answer to the roll-call of 1891!

DESTROYING THE CABBAGE WORM.

It may benefit some one for me to say how I treated my cabbages last summer to destroy the worms. After trying many other things without success, I took a pail of scalding water and a pail

of cold water, then I poured about one quart of the hot water on the cabbage head so as to hit every worm, immediately applying about two quarts of cold water to the cabbage head. It killed the worms, but did not injure the cabbage. But the cold water must be applied immediately after the hot is, to prevent the head of the cabbage being cooked. SUBSCRIBER.

Greensboro', Vt., May, 1871.

BUTTER MAKING.

Perhaps you think the butter question is about used up, but as I have read the different opinions of others I want to express mine. I have sold considerable butter for one that has not had a large dairy, but has had a large family, and as my butter has seemed to give satisfaction generally, I think that I know what good butter is.

As to coloring butter, I prefer annotto. It gives no taste to the butter, as carrots do. It is much easier prepared, and when we can get it of a reliable druggist, it seems to be pure. I use no potash or saisoda with it. A lump one-fourth of an inch square will color one gallon of cream sufficiently. I put it in a rag and rub it all through in a little warm water, and then strain it through another rag or cloth kept for the purpose, and after my cream is in the churn I add the coloring water.

The past winter we have not had to churn our cream over twenty minutes, and many times not over ten, to bring the butter. I never scald my new or old milk to get cream from it. I think that I can get more cream not to scald it. I keep my milk and cream where they do not freeze. I keep a smooth stick in my tin cream pail to stir my cream with every day, and am careful not to leave any cream on the sides of the pail, as it would be likely to mould.

After we have made good butter, washed and salted it once, and the next day worked it over, in order to keep it good, it must be kept from the air either under brine or with a wet cloth covered with salt, for if exposed to the air too long it will spoil.

I have made butter for the last thirty-four years and I never had a mess of bitter butter. I once tasted of some at a neighbor's, but could not eat it.

Windham, Vt., April, 1871. M. P. B.

HEN MANURE COMPOST FOR CORN.

I have about four barrels of hen manure. Now will you, or some of your correspondents, tell me the best way to prepare it to manure corn in the hill, and oblige at least one subscriber?

Orange, N. H., April 29, 1871. J. FERNALD.

REMARKS.—Moisten the droppings, and let them lie in a heap a few days, so that they will the more readily pulverize, and then mix thoroughly with two or three times their bulk of soil, muck or earth, and you will have a fine corn starter. We recollect of seeing or hearing the statement of some farmer that after softening the droppings he put them through a threshing machine to break all lumps, &c.

BARREN FIG TREES.

In answer to Mr. E. Bailey's inquiries about his wife's fig tree, I would advise smoking, while in full blossom, with old boots, shoes and woolen rags. We have smoked plums and cherries with good effect. If that don't do any good set out one or more trees with the one you now have, another year.

BUTTER MAKING.

I have been very much amused by the remarks about butter making. I will give a little of my experience for about forty years. We have a large pantry with board shelves, on which are two strips of boards to set the pans on, and the shelves are a little distance from the ceiling, to let the air circulate around the pans. In warm weather we have the window out, but have blinds to darken and keep the pantry cool. Very much light I think gives the cream a lighter hue. We color with carrots when necessary, putting a little new milk with the carrot juice. This adds very much to the flavor. Every time I skim my milk, I stir the cream; but not every time I skim one pan. We never have white specks in our butter, nor trouble about its not coming quick. In cold weather we give it warmth and in warm weather keep as cool as possible. H. S. E.

Cuttingsville, Vt., April 29, 1871.

MANAGEMENT OF HENS.

Will Mrs. E. Cooper of Winchester, Mass., please state her way of managing hens—the feed, &c. I have a flock of twenty-seven which have done well, but not quite equal to hers. I began the winter with thirty, but three died of a disease which manifested itself in dullness, and in a stiffness and partial disuse of the legs,—for a prevention and cure of which I would be thankful. I have kept corn by my hens continually; and some of the time wheat screenings, the last lot of which was so adulterated with foul seed and dirt, that I concluded to supply its place with a mush of shorts. My hens will not eat oats, unless starved to it. They also have scraps, and chicken bone (Darling's fresh crushed,) for shells; and fresh water all the time. To prevent lice, I keep two boxes of ashes, one wood, and one coal, in which they wallow. I sprinkle lime in the nests once a week, and occasionally whitewash the roosts. For the sake of health, comfort and economy, I sprinkle dry loam on the manure, under roosts, every few days. When the weather was cool I fed boiled fresh fish heads instead of scraps, but in warm weather they soon spoil. Coal ashes, old plastering and gravel are lying around out doors for them. My worst trouble is, in not having a good hen house. This, however, will be entirely removed before next winter, when I shall try to equal Mrs. C.'s success. They go where they please, but my way of feeding limits their propensity for travel and mischief.

Franklin, Mass., May, 1871. R. A. FISHER.

OGDEN FARM.—The manager of this farm, who fills several columns of each number of the *American Agriculturist* with the details of his operations in scientific agriculture, has been asked, by some one who wishes to know if it will be safe for him to try similar farming, to give his annual balance sheet. After intimating that this is more than the public have a right to demand, he says:—

Some years hence, when I can *show* a profit, I shall have no hesitation in making a public exhibition of my accounts, for it would do good as an encouragement to others; but until I can show a profit *in money*, there would be no good end subserved by parading my balance-sheet.

HARROWING CORN.—An Iowa correspondent of the *Western Rural* says, as soon as the corn is up big enough to follow the row, take an "A" harrow, knock out the forward tooth, put a bow in the rear end of the harrow to manage it with, put on two horses, and straddle each row with the harrow, which will pulverize the ground, loosen it up,

kill all the surface weeds, and leave the ground in good shape for the cultivator. I then follow up with the two-horse cultivator, and go over with this three or four times, or as long as corn needs working. Be very careful to pull all the weeds out of the hills."

For the New England Farmer.

CUTTING AND CURING HAY.

There are many different methods of practice in this branch of farm husbandry, each thought by its adherents to be the best. Of course the object sought is to secure the hay crop in the best possible condition, to the end that the greatest amount of benefit may be derived from its consumption. There are very many conditions entering into the consideration of the subject, as early or late cutting, as regards the season, the manner of curing, whether in the cock or out of it, &c. No doubt extremes are run into in all cases. The hay is cut when it is too young or stands until it is too old—it is dried too much or secured in too green a state. There is probably no part of the farmer's labor that requires the exercise of greater judgment than this, since upon its successful accomplishment depends the condition and welfare of the stock. There is no one but that has noticed with what avidity the herd will devour the richly perfumed, well cured hay, and with what a disrelish they attempt to sustain life, perhaps by eating musty, unsavory fodder. Now is it not a question, whether hay can be cut too early, from this fact, that it is generally considered that the aftermath or rowen is the best hay that can be given to milk cows, increasing the flow of milk considerably more than the hay from more mature grass. It is said that in some portions of Switzerland where the fields are irrigated, as many as six or seven tons of hay are cut from an acre by cutting as many times, which is as soon as the grass has a fair growth, and long before it even arrives at the period of blooming. One thing is certain, that cattle, when left to roam the pastures and *select* their own food, instead of selecting the more mature portion as their free choice, invariably choose the younger and more succulent, so that, in time the pasture presents the singular appearance of being covered in parts with matured hay, and in others closely grazed; nor is this peculiar to cattle alone, since the same desire pervades the horse and sheep kind. So, then, the desire of animals so far as it can be expressed, seems to favor a young growth. Another fact, too, is frequently noticed, in the falling off in flesh, in the change from pasture to the stable, and *vice versa*, and again in the fall fattening of stock by pasture alone, which the most successful farmer would little think of doing by feeding of hay. Now all of this would seem to point to the necessity almost, to say nothing of the advantage, of cutting hay while young and tender. Not that this should be done as early, or as often as in Switzerland, unless the circumstances require it, but with proper top dressing two good crops will be obtained which will be more valuable than to let the first crop grow until perhaps the seed is fully ripened, whereby only one crop is obtained. No one need hesitate for a moment regarding the palatableness of this kind of food for stock; for if they have any doubts let them place a quantity of both kinds before their animals, and they will soon find that the youngest cut hay, if properly cured, will be the first to disappear.

Undoubtedly these views may be at variance with many, but it is the interchange of views that brings to light the best methods of practice. Then let all present their own modes of practice and reasons therefor that the less experienced may have the benefit of that experience which otherwise, they will be obliged to purchase.

W. H. Y.

A MASSACHUSETTS FARM.

A correspondent of the Boston *Journal* recently wrote as follows to that paper from Dracut:

"During our first visit to this ancient town we heard of a farm and farmer, which, upon personal observation, reminded us of what we had before seen on the prairie lands of the West. The estate lies about a mile from the 'Centre,' and two miles from Lowell, which is in full view. Mr. Milton Fox is the owner of five hundred acres, on two hundred of which he has this year raised two hundred tons of hay, one hundred tons of carrots and one hundred tons of Swedish turnips. Of these crops, the carrots are quite as profitable as any other. They were all off his hands as soon as ready for market, at twenty dollars per ton.

"He has five barns, 100 feet by 40, clapboarded, painted and well fitted. He keeps four yoke of oxen, five span of horses and fifty cows. The ground is so thoroughly cleared of stones that the agricultural machines for harvesting can go anywhere over his well walled and highly cultivated acres.

"The farm house is a French roof mansion, with modern improvements. The crops raised last year will bring about $12,000.

"Mr. Fox is a liberal, enthusiastic farmer, and his success a splendid illustration of what may be done by practical knowledge and enterprise on our comparatively hard and sterile New England soil."

THE MAPLE SUGAR CROP.—The Montpelier *Watchman* says: "The maple sugar crop of Vermont will be larger this year than for any one year during the past twenty, and will be a very important item in the productions of the State—even at the low price sugar brings now—the best being from 8 to 10 cents a pound."

GOLDEN BUERRE OF BILBOA.

Mr. Thomas says this fruit is also known in different sections as "Bilboa" "Hooper's Bilboa," &c., and that it is "rather large, obovate, slightly pyriform, rather obtuse, very regular; surface smooth, fair, fine yellow, russeted round the stalk; dots small, distinct; stalk an inch and a quarter long, slightly sunk; calyx small, erect, basin shallow; flesh fine grained, very buttery, melting, moderately rich—sometimes an obscure acid astringency. Ripens the first of autumn, and immediately follows the Bartlett. Shoots yellow, ascending."

This pear, though perhaps not entitled to the first place in a limited collection, has merits which entitle it to rank as a popular fruit, and as a desirable variety in every garden where there is room for half a dozen pear trees. It does particularly well on the quince.

Our engraving was made from a specimen of the fruit furnished us by Messrs. James Hyde & Son, Newton, Mass., and we think the cut is as good as an illustration of the fruit, as it is of the skill and workmanship of the artist.

—A correspondent of the Iowa *Homestead* says that he has discovered the canker worm in eleven counties of that State.

For the New England Farmer,

SHEEP RAISING.

The question is often asked, is sheep husbandry profitable, and the answer is not always very favorable. Location has much to do with the decision of this question, but care and feed has much more. Sheep need a favorable locality as regards pasturage, suitable care and the necessary amount and kind of fodder. Mutton, lambs, and wool are the three important objects in sheep raising. Therefore in this climate, the winter care of sheep often practically settles the question of profit or loss.

In agriculture, as in other things, theory is of no account, unless it will stand the test of experience. Practical facts are what farmers want. They are matter of fact people, and though liable to be humbugged, they are satisfied with nothing short of experimental truth.

It is not my present intention to write an essay on sheep husbandry, but to answer the question so often propounded in the columns of your paper, How shall I feed my sheep so as to keep them in good order, ensure strong, healthy lambs, and a large clip of wool?

I have no theory to offer, but will state a few facts drawn from personal experience and from observation of the practices of our best farmers. The first great point is to have good healthy sheep, not over seven years old, nor less than one, in fair condition when they come to the barn; and be sure and have them come to the barn before they get poor on the scanty frost-killed grass to be found at that season of the year. Then do not force them to support life on poor, dry, late-cut hay. To be sure, sheep will live on such fodder, but it robs the carcass of all its juices; the flesh decays, and the wool becomes thin, dry and lifeless. I pity the poor sheep that have one of those owners who think sheep will live on anything. Give them good early-cut hay, and enough of it, but none to waste. If you allow sheep to waste fodder in the first days of winter, they will by and by utterly refuse to eat their hay up clean, and will be likely to lose their appetite, and grow poor on the best of feed. If early-cut hay is not to be had in good supply, roots must take its place; in fact, they are indispensable to the health of the sheep.

An abundance of good pure water is as necessary for sheep as for other farm stock. Give them a good dry airy pen, away from catte, horses and hogs, so that they can live a life of ease and comfort, and they will reward you for all the care you give them, and the cost of keeping.

It is not usual for our farmers here to keep large flocks of sheep. We have but few flocks above fifty in number,—from twenty to thirty is about the average of those who believe in keeping a general assortment of farm stock, and make a specialty of none.

Now for a few facts and figures. Osgood Brown of West Bethel, a well-to-do farmer, keeps about thirty sheep, yearly, and has kept sheep for fifty years. When sheep were but one dollar per head, and wool but twenty-five cents per pound he kept sheep, and when sheep were worth from five to eight dollars each, and wool one dollar a pound, he still kept about his usual number,—never excited and never discouraged. He has now among his flock descendants of the first sheep he ever owned, about fifty years ago. He never changes his flock. His rule is, keep the best; never allow the drover nor butcher to pick the flock; but when they are high, keep the best; and when they are low, keep the best,—never be cajoled into selling the finest lambs, because they will bring a little more money.

His rule as to feeding his sheep is as unchangable as the law of the Medes and Persians. He gives them a good hilly pasture, and when the snows come he drives his flock to the barn, and suffers them no more to roam till grass grows again next season. Their food is usually good hay and enough of it; yet they have to eat their share of the coarse fodder during the coldest weather. They are fed morning and night, on the snow, in a large yard, sheltered from the cold winds, and supplied with running water. During the day, they are kept in a good comfortable pen, dry but airy. His lambs are dropped from the middle of April to the tenth or fifteenth of May. He saves a good mow of early-cut, nicely cured clover hay for spring, which he commences to feed out about the fifteenth of March, or one month before dropping the lambs. The first day of April he commences to feed to his thirty sheep one-half bushel of potatoes and one-fourth bushel of oats, and when the lambs begin to drop, he gives one bushel potatoes and one-half bushel of oats daily,—fed regularly after eating their hay,—say nine o'clock in the morning. His sheep are always in good order; have an abundance of milk, and lose but very little wool. In 1869, of twenty-seven lambs dropped, he raised twenty-six, and on the 10th of August sold them for $3 a head. His sheep yielded 4½ pounds of wool each, which brought forty-five cents per pound. In 1870, from twenty-seven sheep he raised twenty-six lambs, which brought the first of August $3 each, and his sheep sheared four pounds two ounces each of wool, which in June was worth forty-four cents per lb. These are dry facts, and all can draw their own conclusions.

Elijah Wheeler, of Albany, another successful farmer, keeps about the same number of sheep, and feeds in the same way, and is about equally successful.

George W. Grover, of Bethel, in 1869, kept about the same number of sheep, fed meadow hay during the winter, and a quart of Rutabaga turnips every other day. His lambs were dropped in March. He then fed oats

in addition to the turnips. His lambs brought $3.25 each, and his sheep sheared 4¼ lbs. of wool per head.

A. O. Paine, of Mason, prefers beans to oats. He feeds a gill of beans and a pint of cut potatoes to each sheep, per day, and has good success. Corn is good for flesh, but it will not make milk. G. H. B.

Mason, Me., April, 20, 1871.

REMARKS.—In a private note our correspondent alluded to the proposition recently made by another correspondent, that two pages of the FARMER, instead of one, be filled with agricultural matter, and wishes his vote to be recorded in the affirmative. He also intimates that the foregoing article should be accepted as evidence of his purpose to furnish his proportion of the additional contributions which such a change would require.

Let the question of pages be decided as it may, space for such articles as the foregoing will be found or made in some way. The docket must, and will be kept clear.

For the New England Farmer.

THE GARDEN IN JUNE.

How pleasant and agreeable to the hard-worked husbandman and his family, in the spring-time or early summer, when the system is in the transition state, between winter and summer—sort of half asleep and half awake—to come to his meals with some fresh vegetables, new, green and crisp, upon his table, to tempt his otherwise half awake appetite. Every family who is able to have a house over their heads, with a few rods of ground attached, may indulge to a greater extent than they are accustomed to do, in green vegetables, &c., the product of their own skill, if they would use some of their spare time in cultivating a garden. It is the experience of all farmers, so far as I have ever heard them express the same, that no part of the farm produces equal to the garden spot, and that too where little extra care is given it, none above the general farm. If under such management the garden pays, in such returns, what might it be where greater care and more skill are expended?

I know some farmers, who, desirous of growing some fruit, apples, pears, currants, &c., procure the trees and bushes at cost of money and time, and with considerable care plant them out, and here they think their duties end. Such farmers, after a few years, come to the conclusion that fruit growing does not pay, become disgusted with attempting it, and cut down their trees, if they do not die of themselves. So some farmers start well in the spring; plough and prepare a garden with commendable care and zeal; plant seeds of vegetables, in variety, making judicious selections, and doing all in a commendable manner, and here they rest. The seeds germinate, so do the seeds of weeds in the soil and manure, and the weeds being the strongest in numbers as well as the most hardy, over-ride the vegetables, choke them out and destroy or greatly injure the crop. Such gardening does not pay; and the proprietor jumps at the conclusion that all gardening is unprofitable, for him, at least on his soil. The garden, to be profitable and produce abundantly, not only needs thorough preparation, timely planting, with a judicious selection of varieties, but afterwards *frequent* attention, though a few moments devoted to its care daily is all that is needed, and this time may generally be saved, when otherwise it would be lost time.

During this month the more general transplanting of plants from seed beds is to be done. All are supposed to understand why this is done, and the mode of doing it; but too many do the work with little care and method, and without proper preparation of the soil. All extra preparation of the soil, care and pains taken in the performance of lifting and setting the plants, are generously repaid in more rapid and better development of the plants generally.

BEANS.—There is yet time for pole beans to mature, if planted at once. Successive crops of Dwarfs may be planted. Hoe and cultivate, when not wet, all previously planted, to induce rapid growth.

CABBAGE, CAULIFLOWERS, and all the tribe, may be transplanted any time during the month, for autumn use.

CARROT SEED, sown now, will make a good crop. Soak the seed and dry off in plaster or ashes.

CELERY.—Sow seed for late crop; prick out young plants to have a supply of stocky plants for transplanting the last of the month and during July. For fall crop, transplant into trenches four feet apart, last of the month.

CUCUMBERS.—Plant seeds the last half of the month, for pickles. Gauze frames over the plants will keep off the striped bugs, &c. Liquid manure applied will encourage rapid growth, as well as frequent culture.

EGG PLANTS.—Transplant into warm, rich soil; that enriched with horse manure is best; hoe often.

INSECTS.—During the month they will be found abundantly committing their depredations. Every means will need be used to destroy them. New enemies are found every season,—look out for them. I told you last season of a worm on my strawberry plants, and also two on grape vines,—look for them.

ONIONS.—Encourage, by every means, rapid development, as quick development is very important.

PEAS.—Sow for late summer use and for growing seed free of bugs.

RADISHES.—Seed may be sown among other crops, where they will be partially shaded. Leave a few early for seed.

TOMATOES.—Transplant into well-prepared soil for the main crop. Try a few trained to stakes, keeping all side shoots pinched in short. Trained thus they may be set nearer together and they are said to bear and ripen better. Guano and liquid manure promote rapid growth.

WEEDS.—No good gardener will need any prompting here. Seed is so easily disseminated and in such a variety of ways, that so long as there are careless gardeners, farmers and unimproved land, they will be a source of continuous annoyance to the neat, practical cultivator. Vacant spots are a standing reproach, and will not be tolerated in any well-kept garden.

SMALL FRUITS.—Blackberries and raspberries,—keep all canes and new growth properly tied to stakes or trellises. Cut out and keep down all new shoots, except such as are wanted for next year's bearing, or for increased planting. Thin the clusters, where large, nice specimen fruit is desired.

CURRANTS.—Keep the ground well cultivated and free from weeds. A good mulch about the roots will prolong the season of fruits, as well as add to its value.

GOOSEBERRIES are better for having the ground around kept a little moist, and the bush and top open to air and sun.

STAWBERRIES.—As soon as the crop is off, clean out all grass weeds, &c., and keep the runners cut clean; hand-pick and destroy the worms that destroy the foliage.

W. H. WHITE.

South Windsor, Conn., 1871.

For the New England Farmer.

FARMERS SHOULD BE EDUCATED.

BY EMORY A. ELLSWORTH.

It has been the prevalent opinion among all nations, since men began to be educated, that learning and mental culture were utterly useless to the farmer in the pursuit of his vocation; and not until very recent times have men awoke from this absurd delusion to the fact that education is of the greatest importance to the successful pursuit of husbandry.

About fifty years ago Europe began to apprehend this truth, and founded many schools for the advancement of agriculture and the training of young men for the successful pursuit of this most difficult and complicated art. But in the United States, and especially in Massachusetts, where general education is so highly esteemed, and where institutions of learning are so numerous, this subject is still considered of little importance, and receives slight attention from the mass of the people.

It is a mystery how this idea has so long held its sway against the powerful current of advancement in science; but it is apparently owing to the hereditary ignorance and unreasonable prejudice against learning of that large class of our citizens, known as the "practical farmers," who, being ignorant of the first principles of science themselves, have exerted their influence to prevent this great forerunner of progress from affecting their vocation.

There is a notion among this class of people, that uneducated men are by far the better workmen, and in proportion as they become educated, in like degree they become *lazy* and unwilling to perform manual labor. This notion probably arose from the fact that educated men rarely turn their attention to manual labor, for the reason that their services are much more needed in educating others, than in the province of agriculture or the industrial arts. Perhaps it would be more proper to say better remunerated, since well informed men are few; but wherever intelligence is combined with manual labor, improvement and advancement are certain to follow.

Since practical farmers have ever ridiculed and scorned the idea of accepting book-farming to direct their efforts, how could men of science intrude into the domain of agriculture? This seems to be the prevailing opinion of those who till the soil, and this also accounts, at least in part, for the undeveloped condition of the science.

Agriculture was the primitive employment of men. Long before the condition of society called for the other useful arts, it was the prominent and almost the only branch of industry. King and subject, master and servant, labored together in the field or vineyard, or watched their flocks and herds, side by side, on the plains of Palestine. Agriculture, though the oldest, is nevertheless the rudest of all the useful arts.

Now why is this? It is partly because the farmer has been working blindly, disregarding all the guide books which would direct him to success, if he would only consult them. He has labored on until discouraged for want of success, he has turned his attention to other fields of labor, or still plods on in darkness to obtain but the bare necessaries of life.

The laws of nature furnish the key to progress in agriculture, and not until these are understood can the farmer expect reward for his efforts; not until these are fathomed can men till the soil with an intelligent object in view.

About the beginning of the present century the labors of scientific men were first turned to the condition and improvement of this much neglected branch of industry, and to-day, by the light thrown upon it by modern discoveries, agriculture can obtain a place among the sciences. In many departments it is no longer a blind experiment, but a positive science. It is no longer a bewildering mass of uncertainties, but leads to satisfactory and unmistakable conclusions.

How unjust has been the prejudice with which practical farmers have regarded book knowledge in farming! Books, indeed, are not ploughs, teams nor laborers; yet they direct and guide the working of each. Does any wise traveler disregard the guide board or book because it does not furnish him with a mode of conveyance? Their only office is to direct; and likewise the principles of science and the laws of nature are but the guides to successful husbandry, and the farmer who expects success from *books* without *labor*, or from mere *labor* without the guide of *books*, is foolish.

In no calling at the present time are intelligent and educated men needed as much as in agriculture. Men acquainted with chemistry and the other natural sciences and their applications; reasoning and thinking men, who are capable of carrying out plans and experiments on a thoroughly scientific basis. These must enter the ranks of the practical husbandmen before this branch of industry can be raised to its proper level, or brought to anything like perfection.

We have theories on agriculture without number laid before us every day, either through the medium of agricultural papers or by lecturers; a multitude of non-conclusive experiments have been made and circulated, yet there is hardly a point in all our system of American agriculture settled on a firm and satisfactory basis.

In view of this, should not our farmers be educated so as to be able to ascertain the true from the false, and to be able to settle those many disputed points, and as well to be capable of applying the principles of science to their daily work.

The social position of farmers as a class, is far below the level they should hold; for in no industrial class are there found so many specimens of a truly noble character; so few addicted to the tricks and vices of the world, as in the class of the hard working farmers. Examine the criminal lists brought before our courts of justice, and how few you will find who came from the farm.

Now, since among the farmers there can be found so few of those degraded and unprincipled men, why is it the popular idea that they are beneath the level of society in general? Why is it that a person engaged in a liberal profession is more honored than the husbandman on whom the world has to depend directly for support? It is because *mind* is the recognized king over *matter*; it is because of the natural homage which the world pays to education. Therefore give the farmer a full acquaintance with all the laws and principles of the sciences connected with his art, and you will raise him to the level with the most brilliant intellects of the honored professions.

This contempt for the farmer and his vocation is unjust; but still more unjust are the contempt and scorn with which the mass of farmers look upon education as connected with their business.

Therefore, the active farmers of the State should cast aside these narrow and prejudiced views of the most important subject, and spend more time than heretofore in the reading of standard agricultural works, and thus be able to understand the subject with which they have to deal. The young who are just entering the field should appreciate the unspeakable importance of understanding thoroughly all which can be learned from books, and thus derive all possible benefit from the experience and knowledge of others. Therefore, prepare yourselves faithfully and well, before assuming the responsibilities of your profession.

Amherst, Mass., April 3, 1871.

COOKING FOOD—WINTER BUTTER.—We are still (March 21,) cooking food for pigs. It is a good deal of work, and it is doubtful whether the *saving of food* would pay for the expense. But I cook to *save digestion* rather than to save food. I want to enable the pigs to eat and digest more food. And if cooking will do this, it will pay. Cooking does not increase the amount of nutriment in the food. It may make it more palatable and more easily digested—that is all. I am inclined to think that the assimilating powers of a well-bred pig are greater than his digestive capacity. If they are not, there is little to be gained by cooking the food.

We are still feeding our cows cooked cornmeal—say three quarts of meal per day to each cow. I am satisfied that it pays. We have made just as nice yellow butter all winter as I wish to eat—*better* butter than we make during the hot summer weather. I am inclined to think that the best time to have cows come in, where nothing but butter is made, would be in September, and let them go dry during the hot weather of July and August. We should then have plenty of skim-milk, just when we most want it, for young pigs. And the cows would run in the pasture, and require no milking during the busy season of harvest. —*J. Harris, in American Agriculturist.*

GRAFTING-WAX.—As the grafting season is upon us—April being by far the best time for this operation—we may as well repeat our recipe for making grafting-wax, which is simply to take two pounds of rosin, ten ounces of beeswax and one gill of linseed oil, stew it well till the mass is completely dissolved; apply it to the grafts while warm with a stiff brush or pine-paddle, so that air and water are completely excluded. The consistency of the wax should be such that it will not be so hard as to crack in the cool winds of spring, or so soft as to run in the warmest weather of summer.

Any smaller or larger quantity can be made by using the above proportions.—*Exchange.*

WET LANDS.

VERY recently we stood looking upon a narrow valley of wet land, with a stream meandering through it. This was in former times the bed of a mill pond. The low land varies in width from three to thirty rods. It belongs to perhaps a dozen individuals who are the owners of the hard land abutting upon it. The stream comes from a swamp, perhaps a mile and a half distant.

This low land has all been cleared up, not a stump or clump of bushes can be found upon it. Much of it has been dressed with sand and gravel. Portions of it have been ploughed and sowed with herdsgrass and red top, and dressed with manure. It is all in grass, yielding large crops of hay; most of it is mowed twice a year. Where it is top dressed once in two or three years, the hay is of the best quality. Where it is not, the meadow grasses come in rapidly and mix with the sweet grass, showing the tenacity of life which the meadow grasses possess.

There is no more valuable land in the vicinity,—it requires attention and some labor to keep it in good condition, but the increased value of good hay over that of the meadow hay, will well repay the cost and labor of top dressing.

Another instance occurs to us in which a gentleman owned a piece of wet meadow which was overflowed two or three times a year—the water often remaining upon it many days. This could not be drained. But there was a bank of sand and gravel adjoining it. The owner covered a portion of this meadow with this sand and gravel in the winter, when the soil was frozen. In the spring he sowed it with herdsgrass and red top, spread on a small quantity of manure and harrowed it smooth, and cut several large crops of good hay in succession. Where he cut a small quantity of sour meadow hay before, he now cuts three tons to the acre of fine hay.

You will say this is not permanent improvement of land; it will soon run back into the condition of meadow land. True, it will require attention. It must be top dressed with upland soil or manure, or both, and perhaps re-seeded once in two or three years, and this implies labor and expense. But what land can you keep in good condition without labor and expense? Light upland soil will require twenty-five or thirty loads of manure to be teamed on to it. It must be ploughed and sanded and harrowed, and this process must be repeated once in four or five years, and then you will get one ton of good hay to the acre; whereas you would get two tons on the meadow, and in addition to the cost of the labor, there is the value of the manure which you want for other crops than grass.

The upland soil which you put upon the meadow costs nothing but the labor. The actual cost of keeping such a piece of meadow in good condition, is less than that of keeping a light sandy soil in good condition; the improvement is quite as permanent, and the profit much greater.

There have been many pieces of meadow land reclaimed in this way, as experiments; and although the experiments have been successful,—that is, have well repaid the labor,—they have been neglected, and suffered to run back into their former condition. Their owners have been disappointed, because the improvement has not proved permanent. They expected that good grasses once rooted in the soil would continue to yield good crops for many years.

But have they any land that will do this, without a constant renewal of the elements of fertility in some way? Even the rich wheat lands of the West soon become exhausted without top dressing, or bringing up from below new strata of soil to be oxydized by the atmosphere and fitted to add new elements of fertility to the seed bed of the wheat.

There is no crop so easily renewed and kept in good condition as grass. A dressing of fresh unexhausted soil will produce for grass the same result that a dressing of manure will produce for most other crops. The soil,—it may be mostly sand thrown from a deep ditch and left exposed to the frost and air for a year or two, and then spread upon the adjacent land,—will sometimes increase the quantity and improve the quality of the grass surprisingly. The gravel and clay from a well or the bottom of a cellar, spread upon grass, especially if the soil is moist, will sometimes produce wonderful results.

Does this show the advantage of deep ploughing, especially of deep fall ploughing,

by which new soil is exposed to the oxydizing influence of the atmosphere and pulverized and fitted to yield its accumulated fertility to the coming crops? The best time to reclaim wet lands in this way, is while the ground is frozen. The team can then readily work upon its surface. The frost will not prevent the taking of the sand or gravel from the bank or pit in the spring, the grass seed may be sown and the harrow or brush may smooth the land.

Every patch of meadow thus treated is so much added to the farm, and every ton of hay thus procured adds so much manure for the cultivation of other crops.

FORTY SIGNS OF RAIN.

An excuse for not accepting an invitation of a friend to make an excursion with him.

1. The hollow winds begin to blow,
2. The clouds look black, the grass is low;
3. The soot falls down, the Spaniels sleep,
4. And spiders from their cob-webs peep.
5. Last night the sun went pale to bed,
6. The moon in halos hid her head;
7. The boding shepherd heaves a sigh,
8. For, see a rainbow spans the sky.
9. The walls are damp, the ditches smell,
10. Closed is the pink-eyed pimpernel.
11. Hark! how the chairs and tables crack,
12. Old Betty's joints are on the rack;
13. Loud quack the ducks, the peacocks cry;
14. The distant hills are looking nigh.
15. How restless are the snorting swine;
16. The busy flies disturb the kine;
17. Low o'er the grass the swallow wings;
18. The cricket, too, how sharp he sings;
19. Puss on the hearth, with velvet paws,
20. Sits wiping o'er her whiskered jaws.
21. Through the clear stream the fishes rise,
22. And nimbly catch th' incautious flies;
23. The glow-worms, numerous and bright,
24. Illum'd the dewy dell last night.
25. At dusk the squalid toad was seen,
26. Hopping and crawling o'er the green;
27. The whirling wind the dust obeys,
28. And in the rapid eddy plays;
29. The frog has changed his yellow vest,
30. And in a russet coat is drest;
31. Though June, the air is cold and still,
32. The mellow blackbird's voice is shrill,
33. My dog, so altered in his taste,
34. Quits mutton-bones, on grass to feast;
35. And see, yon rooks, how odd their flight,
36. They imitate the gliding kite,
37. And seem precipitate to fall,
38. As if they felt the piercing ball.
39. 'Twill surely rain, I see with sorrow;
40. Our jaunt must be put off to-morrow.

—*Dr. Jenner.*

GROWTH OF FORESTS IN NEW ENGLAND.—To encourage farmers to fence off a portion of their poor pastures for the growth of wood, Mr. J. Lawrence, in his address at the meeting of the Vermont Board of Agriculture at St. Johnsbury, said, "there are a few acres of high land about one mile from this village, almost in sight from those western windows, that sixty-four years ago grew a good crop of corn, planted among the logs, Indian fashion. The owner dying, it was left to itself. It grew up again to wood. It has been twice thinned out, much good wood being taken from it, and now has 150 sugar trees to the acre that have been used as such for six to eight years. That maple grove is admired by all who see it, and $200 per acre would no doubt be refused by the owner to-day."

AN UNSUCCESSFUL FARMER.

It is a more common practice, as well as a more desirable one, to speak or write about successful than unsuccessful farmers. But there may often be as much profit to be gained from learning the faults and mistakes of men, as from their successes. In the town of —— I once knew a man whom I will call Smith, and though there are many Smiths in the world, there are at least an equal number of farmers who resemble this man in their mode of farming. When he was a young man and worked out for a living, no better help could be hired. He was stout, healthy, active and willing to work. Soon after marrying a wife, he purchased a farm in not a very inviting region for agriculture, and still less favorable for good society. The place was a small one, with a soil in not a very good condition, and not very easy to till. The buildings were poor and were suffering sadly for want of repairing. Perhaps many may say there was not any chance for a young man to succeed under such circumstances; but was it impossible? I will acknowledge that this person was not successful in his farming; but what were the reasons? He did not seek to improve his farm, by removing the stumps and stones, by enriching the soil, or by making his buildings more comfortable and beautiful. Though he labored hard during the first few years, he did not work for his farm. He would have a threshing machine or a sawing machine and spend a great deal of time in threshing grain, or sawing wood, or doing something for some one else beside himself. For these jobs he did not get very large pay, but perhaps as much as any day laborer could get at hard work. But notwithstanding he owed but little for his farm when he purchased it, at the end of ten years I think the debt had increased instead of diminishing. By working for other people he had to neglect his own land. He raised only produce enough for his own family, and what he received for his wages was scarcely sufficient to pay his other expenses of living; and consequently his accumulated property received no increase from year to year. His farm was diminished in value, therefore he was making nothing by way of rise in real estate. He being more interested in people and things away from home than at home, he not only failed to care for his farm, but was negligent in providing for his family. The store or bar-room had more attractions to him than his own fireside. Instead of enjoying the luxuries at home, which he might have done by cultivating fruit trees,

or by raising berries, &c., he satisfied his appetite by partaking of those imagined luxuries which are found at taverns and saloons. Instead of trying to make home happy he made it a place of sadness.

Now I believe that this man might have paid for his farm in a short time by spending all his time and energies upon it. Instead of digging among the stones for a few bushels of potatoes and corn, and gathering thinly scattered spears of grass from a rough mowing, he might have harvested good crops from a smooth surface and a good soil. His cattle instead of growing poor for want of proper shelter, might have been made fat by nailing the loose boards on the barn and by regular feeding, not by his wife but by himself. His family might have been made as intelligent, comfortable and happy as any other family by giving them books and papers to read, sending the children to school, and going with them to church, by making the house convenient and attractive, and by attending to every other home improvement possible. By so doing he might also have increased in wealth.—*C. H. Farnsworth, in Vermont Farmer.*

WHITEWASHING.

Good whitewash, well-applied to fences, rough siding, and the walls and ceilings of buildings, has a highly sanitary influence, as well as being in the highest degree preservative in its effects. To be durable, whitewash should be prepared in the following manner:—Take the very best stone-lime, and slack it in a close tub, covered with a cloth to preserve the steam. Salt—as much as can be dissolved in the water used for slacking and reducing the lime—should be applied, and the whole mass carefully strained and thickened with a small quantity of sand, the purer and finer the better. A few pounds of wheat flour mixed as paste may be added, and will give greater durability to the mass, especially when applied to the exterior surface of buildings. With pure lime, properly slacked and mixed with twice its weight of fine sand and sifted wood-ashes, in equal proportions, almost any color may be made by the addition of pigments. Granite, slate, freestone and other shades may be imitated, and without any detriment to the durability of the wash. This covering is very often applied and with good effect, to underpinning, stone fences, roofs and the walls of barns and other out-buildings. —*Germantown Telegraph.*

Sales of Improved Stock.—Wm. Williams, manager of A. W. Griswold's Short Horn herd at Malvern Farms, Morrisville, Vt., reports recent sales of the following bulls: To W. F. Vail, Emporia, Kansas, Climax 4th, 9640; to Wm. F. Blanchard and another, Manlius, N. Y., Royal Bridegroom, 10913; to Henry M. Arms and others, Springfield, Vt., Crown Prince, 9701, and The Baronet, 11057; to D. L. Wright & Sons, Weybridge, Vt., Sultan, 9173; to C. P. Hatch, Brandon, Vt., Constantinople, 7754, and to Mr. Bryant of Vermont, Malvern Boy, 6995.

A Rich Man's Girl.—Here is a girl who happened not to be born poor. Her father is rich enough to live in Fifth Avenue; but he does not live there. He gives her all the advantages of city education which she chooses. Eight months in the year she spends in home duties, charities, parties, concerts, operas, theatre, her own music and the like. But in the other four months she lives her own true life. She has found a pure country town, undiscovered yet by the tourists; and there she goes, with a bloomer dress, and lives on a farm and works like a farm-hand—up in the morning with the men, helping take care of the animals, then to the fields to work with them, driving the oxen and pitching the hay. She has a very definite idea of perfect earthly happiness. It is to raise animals on a stock-farm; and, if she were thrown on her own resources, I have no doubt she would do it. No starving over the needle or stooping behind the counnter for her. And yet she is no Amazon; but a pure, womanly girl, without a grain of coarseness, a true lover of nature, with an insight almost like Thoreau.—*Gail Hamilton.*

THE HERMIT-CRAB OF THE MARQUESAS.

Low trees or shrubs, called bay-cedar, completely cover these islands. Crawling upon the branches were great numbers of hermit-crabs, each with his stolen coat upon his back. This is truly a *freak* of nature. Many of the species are aquatic, but this one is terrestrial, and does not go into the water. With chest and arms of formidable strength, this creature ignobly tapers to a soft, worm-like posterior. Like Richard, not shaped for sportive tricks, curtailed of fair proportion, cheated of feature, deformed, unfinished, sent before its time into this breathing world scarce half made up, it seeks to usurp and intrench itself within the castle of another knight of the shore.

As soon as the young crab has attained sufficient size and strength to assume its wonted responsibility, and struggle for existence, it forthwith looks about for "its size" among the cast off univalve shells; first thrusting a long claw into the chambers to make sure that all is well and the castle vacant. Should a smaller or weaker knight of his order chance to be the occupant, battle is given at once. The sally-port is closed by the stout mailed arms, and the castle held strictly on the defensive as its only safety. The ambitious knight is on the alert, however, and eventually succeeds by strategy. The weaker party relaxes a little, and peeps forth to survey the field. A well-aimed blow and

quick passage of arms place the incumbent *hors de combat;* he is dragged from the gates, and quick as thought the conqueror throws his rear within the castle, winds up the spiral turret, and presents a bold front of mailed armor at the gate. This strong-hold is held unless some party yet stronger gives battle anew.

These hermit-crabs are exceedingly pugnacious, and seemed to be continually disposed to rout and plunder. Several large ones were sent North, packed in a small box. One individual remained; he, the strongest, had devoured all that was edible of the others, leaving only the shells and claws. The survivor was kept under a glass bell for a year. He moulted once successfully, casting a perfect shell, an exact fac-simile of himself; but he died in the act of casting the second time. This crab became quite tame; eating from the hand, and remaining partially out of the shell when touched, though usually they remain "closely mewed up" when approached.

It is a ludicrous sight at times, when great numbers of these creatures congregate about a carcass, or climb the bushes after a rain to sip the moisture from the hollow leaves. An officer of the post at Tortugas, lately arrived, filled his pockets with the pretty shells so profusely scattered upon the keys. On landing at the wharf, homeward bound, he was much surprised at the manifestly improper expression that met him in every face of the guard, from sergeant to private. A friendly voice called his attention to the crawling multitude which now well-nigh likened him to the tawdry shell-work of frames and fancy boxes. The crabs, in many instances, can retire within the shell so far that they are not readily observed. One, enthusiastic in his first blush of delight at finding so large a number of pretty shells so near each other, is quite likely to fill his pockets greedily, without stopping to examine them, then and there. The shy creatures withdraw, and hug closely the inner chamber of the shell the instant a footstep is felt, and so remain until all danger is past—hence the possible mistake of which our friend really became the victim. An amusing sight was afforded in the office of the engineer in charge at Fort Jefferson. The officer—now our distinguished Quarter-master-general—had a large number of these crabs, from the largest to the smallest, placed upon the floor. Then commenced a novel scene—battles and combats, sparring, and rough-and-tumble fights; while numbers of them crawled upon the walls, and manifested every phase of curiosity by examining closely all parts of the room. A large species, which usually selects the turbo, a shell about the size of a large tea-cup, had the habit of living under houses or logs, and seemed to sally forth more at night. Occasionally they would crawl into the house. One particular individual became notorious as a constant visitor, and regularly crawled up the corner of a book-case to drink water from a dish—never, of course, leaving his shell behind. They present an exceedingly grotesque appearance shambling along with their heavy stolen shells. Diogenes must have learned his habit from these creatures. Some naturalist has given the philosopher's name to one species.

These hermits seldom adopt an imperfect shell; but the height of the ludicrous was reached when we discovered an individual ensconced within the bowl of an old black clay pipe nearly stemless. It required all the taction the poor weak abdomen could muster to keep a sure tenure of possession. Commiserating his forlorn condition we gave him a chance to change quarters—an opportunity which he seized with alacrity; not unlike in that respect some in the army who delight in "turning each other out according to rank." The hermit is opposed to "commutation of quarters," and takes his "in kind"—*casemates* though they be, of *one story*, and *no back window*.—From "Along the Florida Reefs," by Dr. J. B. Holder, in *Harper's Magazine for April.*

GIVE THE BOYS A CHANCE.—One of the surest methods of attaching a boy to the farm, is to let him have something upon it for his own. Give him a small plot of ground to cultivate, allowing him the proceeds for his own use. Let him have his steers to break, or his sheep to care for. The ownership of even a fruit tree, planted, pruned and brought to bearing by his own hands, will inspire him with an interest that no mere reward or wages can give. In addition to the cultivation of taste for farm life which such a course will cultivate, the practical knowledge gained by the boy will be of the highest value. Being interested, he will be more observant, and will thoroughly learn whatever is necessary for his success.

Another and equally important advantage will be the accustoming him early to feel responsibility. Many young men, though well acquainted with all the manual operations of the farm, fail utterly when entrusted with the management of an estate, from want of experience in planning for themselves. It is much better that responsibility should be gradually assumed, than that a young man should be first thrown upon himself on attaining his majority.—*Cor. Ohio Farmer.*

IRRIGATION.—Dr. March in his lecture on "Spain and the Pyrenees," says that land irrigated in Spain will sell, everything else being equal, for $500 an acre, while that alongside of it, not irrigated, will only bring $50 an acre. One company organized in Madrid with a capital of $1,500,000, has reclaimed 300,000 acres of land, and are paying dividends equal to 18 per cent. on the investment.

ROTATION OF FOREST TREES.

AMONG farmers there has been much speculation as to the cause of rotation in forest trees. It is well known that when a forest is cut off, it is not usually succeeded by a growth of the same kind of wood. If hard wood is taken off, it is succeeded by soft wood,—pine, white or yellow, hemlock, and sometimes in low land by spruce or hackmatack. If the growth removed was of the latter varieties, then oak of several kinds, maple, beech, walnut or chestnut may succeed.

Various reasons are given for this change. Mr. THOREAU, the author of "Walden," "A Week on the Merrimack River," and other works, was in the habit of passing much time in the woods and fields, and was a constantly interested observer of the operations of nature. In one of his works, entitled "Excursions," he states the opinion that the rotation of forests is occasioned by the "transportation of seed from where it grows to where it is planted. "This is done chiefly," he continues, "by the agency of the wind, water, and animals. The lighter seeds, as those of pines and maples, are transported chiefly by wind and water; the heavier, as acorns and nuts, by animals."

Suppose that an oak forest of ten acres were removed, is it probable that the winds would carry seeds of the soft woods so as to plant that precise ten acres, and no more? Why not disperse them over only a portion of it or scatter them beyond, over fifteen or twenty acres? It is not unusual to find a ten acre forest of hard wood succeeded by soft wood, over nearly the *same limits;* not much less, and not much more! The winds do not probably spread the seeds of plants with such mathematical exactness.

It is true, that adjacent to a forest of pines, if other crops are not growing there, there will be an extension of pine forest if the soil is suited to their growth. So in a growth of walnut or oak, squirrels may carry nuts away and bury them in the soil, but as these are hidden for future food, they would not be likely to be in sufficient quantity to start up a new forest. But the truth is, they do not generally take the nuts away from the forest and hide them, but place them in cavities in the trees themselves, or in the ground under them. So the blue jays, and other birds, hide nuts, but *in* the forest, rather than away from it. In smaller fruits, such as cherries and the seeds of raspberries and blackberries, birds swallow the whole fruit, and drop their seeds in every direction. Neither the birds nor beasts, however, take them to well defined limits and deposit them, so as to bring plants of an entirely different kind from those which preceded them on the same ground.

Now as to what nature has been doing in the myriads of years of her operations, we know but little. In the different orders of plants which have subsisted upon the surface, and at length mingled again with the dust from which they were formed, it is probable that the seeds of each may have been shed upon the soil. In the great changes which have taken place upon the surface by the agency of earthquakes, tornadoes and floods, these seeds may have been so thoroughly mingled with the earth as to furnish all sorts of seeds of plants which are indigenous to the region, throughout every portion of it, whether near the surface or vastly below it.

This, we believe, is the common theory. We have found only one person who states it as his belief, that creation is *now* constantly going on; that the seeds of plants which covered the earth thrown out from forty feet below the surface, in digging a well, were *then and there created*, and did not exist in the earth when it was thrown up!

The prevailing opinion, however, among the most intelligent writers, is, that this change takes place in consequence of the *exhaustion in the soil of those elements of nutrition which are indispensable* to the healthy growth of the plant. That the natural law is, "that where other circumstances of climate, moisture, &c., are equal, the natural vegetation—that which

grows best on a given spot—is entirely dependent upon the chemical constitution of the soil."

But both the soil and the vegetation which it nourishes, according to Prof. Johnston, are seen to undergo slow but natural changes. Lay down a piece of land to grass, and after a lapse of years the surface soil—originally, perhaps, of the stiffest clay,—is found to have become a rich, light, vegetable mould, bearing a thick sward of nourishing grasses, almost totally different from those which naturally grew upon it when first converted into pasture. So in a wider field, and on a larger scale, the same slow changes are exhibited in the forests.

Occasionally we see on a tract where pines have been cut down, the land burnt over and then cropped with rye, that birches and other growths will spring up, but after awhile young pines will appear again and take the lead. This seems to be a proof that the elements of nutrition which sustained the pines had not been exhausted, as the pines usurp their former dominion and soon smother the birches and other growths out. We have seen examples of this kind occurring where a vigorous growth of comparatively young pines were cut down.

In relation to these changes the writer referred to above, says:—

"We may take a practical lesson from the book of nature. If we wish to have a luxurious vegetation upon a given spot, we must either select such kind of seeds to sow upon it as are fitted to the kind of soil, or we must change the nature of the land so as to adapt it to our crop. And even when we have once prepared it to yield abundant return of a particular kind, the changes we have produced can only be more or less of a temporary nature. Our care and attention must still be bestowed upon it, that it may be enabled to resist the slow, natural causes of alternation by which it is gradually unfitted to nourish those vegetable tribes which it appears now to delight in maintaining."

DOES A DRY WINTER INDICATE SHORT CROPS?

Some persons are predicting that the winter drought in New England is a pretty sure indication that the coming summer will be a dry one, and that short crops will be the result. It is quite certain, we think, that if the spring rains are withheld through the latter part of April, and all through May, that the most abundant summer rains would hardly compensate for the loss of the former. It is not probable that the mechanical or chemical operation in the soil, whereby plant food is supplied, is the work of a day or a week. The process of preparation of food, digestion, or whatever it may be, we take it is carried on in the soil, so that when the root receives it, it is true sap-food, and passes on as such to the leaves where it is elaborated into substances which are to form its own kind, whether it be the poison hellebore or the delicious peach.

If this "be true," then the soil needs continuous rains, so that active operations may be constantly going on in it, to make ready the food which plants must have, or cease to grow.

Cases have been recorded in England and in other countries, where winters of unusual droughts were followed by short crops. In Algiers, and in the lower plains in that region a few winters ago, the drought was very severe, and the succeeding summer a famine was the result.

Those who plant under these convictions, will do well to select moist land, plant early and cultivate highly, so as to carry crops forward rapidly, and if possible, beyond the reach of a drought.

For the New England Farmer.

HAY AND STRAW.

Is it good policy for New England Farmers to make a specialty of any crop?

It may appear presumptuous in me to advocate a practice that is so generally condemned, and the converse of which is generally advocated by yourselves and your contributors. I think, however, that with some few exceptions, the great changes which have taken place and are now in progress in our country, in the interchange of commodities, and especially of farm products, have greatly altered the question we are now to consider. We are not so much competitors in our markets with our immediate neighbors as with the products of the people of remote States who come to our very doors with theirs, by means of the facilities we have in large measure made available for their use, and by which facilities we are discriminated against, and the distant States encouraged. We do not propose to discuss this apparent injustice to ourselves now, but rather to look at the consequences of our markets being furnished in a large degree from sources remote from home. We ought not to object to this being so, for in itself considered it is very proper in every respect. There should ever be unrestricted markets and free interchange of products within our country's limits. By reason of this reciprocal interchange alone, can we be in any true sense *one*

nation. No two sections of our country are alike in their adaptability to the production of the various textile plants, grains, grasses, fruits, vegetables, &c., &c. Our home markets are unlike, also, in many of their requirements. The immediate vicinity of our cities are expected to furnish those cities with the vegetables, milk, &c., they consume; but how very few, if any, are thus supplied. Various causes combine to prevent it, which it is useless to enumerate here, because we propose to look at the markets as we find them, and see if we cannot with profit to ourselves limit our production to a few leading articles that may be with safety relied upon by reason of the too great cost of transporting them *great* distances.

In ordinary farming, the Indian corn crop is regarded as one of the most profitable and one not to be omitted in our rotations. I admit to having advocated its culture here in past years. Circumstances, however, have greatly changed in respect to the cost and value of labor and the relative value of other products, which in a measure, come into competition with it. We cannot grow it successfully without heavy manuring and a large outlay of labor. We often see reports of crops of corn, and the various items of cost given in its production going the rounds of our agricultuaral publications. Some of them show a very good margin on the right side. It is very curious as well as lamentable to see such discrepancy in the items of *cost of production* often amounting to one hundred per cent. There must be a mistake somewhere.

If we resort to our own experience to find out where this mistake is we come to the conclusion that most of the estimates are under the real cost. Many farmers appear to fear bringing *every* item of cost into their account of outlay for producing a crop. This is a very unwise course for us to pursue. To determine whether our business is paying us in all its various crops or products, a most careful estimate of every item of cost is necessary. To illustrate my meaning, I will give the method I pursued for many years with an acre of land I planted with onions. The farm was valued at one hundred dollars an acre. The acre for onions, two hundred dollars, as it was a choice piece. Interest on it, twelve dollars; a per centage for depreciation of buildings and tools; the market value of all manure used each year; the cost of seed; every hour's labor and board, adding a per cent. for rainy weather, when men were not worth as much as on fair wether,—in fact I charged every item at its *full* cost. The result was, I knew exactly what my crop cost me a bushel when it was delivered. Now I think if we bring this rigid test as to cost to bear upon most of our crops we shall find them *tekel*.

Let us look at the *cost* of producing corn at the West, based on what I know to be facts. It is, or was a few years since, expected that one man with a pair of horses, and a boy to *drop* the corn when not planted with a machine, would put in from thirty-five to forty acres, care for and harvest it, besides lending a hand at grain and hay harvest. I knew a farmer that in 1863 did this on his own place, and the forty acres were kept as clean of weeds as any farm I saw in our own State. The yield was over forty bushels to the acre. Now put this man's corn on to the railroad (which is near him) and bring it to Boston, *over a thousand miles*, at the present cost of transportation, and we have it in competition with ours which has cost us so much more than his as to give him a good profit if sold at the *cost* of our own.

The same appears to be true of potatoes. Maine sends into this State large quantities of them at less cost and of better quality than our own. These two articles are the most relied upon for profit by our farmers, unless we include our hay and cows, which is not advisable to do as they are rapidly becoming specialties in some of our own towns for furnishing milk for butter, cheese and condensing factories, much to the detriment of the productive capacity of the farms if any reliance can be placed on the reports of those regarded as authority in the matter. It is not so much the fact that we have to encounter sharp competition and be discouraged by it, as to see if we cannot so direct our efforts that they shall eventuate in larger profits than if we adhered to our present practice of many baskets for our eggs.

Look over the report of the market for the past week and see if we cannot learn something from it that will instruct us, especially if we find that the present market quotations are very similar to those of the past ten years, so far as the relative value of the same description of products are concerned. With the exception of hay, grain, and meats, during the war and immediately subsequent to it, relative prices have been quite uniform. Since the war, or within two years past, grain and meats have resumed their relative place with other commodities. Hay and straw have not;—more especially the last. Why this is so becomes an interesting question for those who do or can produce them.

It is in this direction I think we are called upon to discriminate, if in any. If these articles are higher relatively than our other products and are likely to be so in the future, ought they not to have a more prominent place in our production? The consumption and use of them in our cities and villages have greatly increased, while their production has diminished. The consequence is the price of them has gone up and our supplies are supplemented from abroad.

Your quotations for country hay the past week was $1.65 per 100 pounds and straw $1.00 to $1.50; New York straw at $1.80 and $2.00 per 100 pounds. The New York

straw I suppose is flail threshed, unbroken and put up in nice bales. Do not these prices look as if there might be a profit in producing them? I think so, and that it can be made to appear to the satisfaction of fair minded men.

I propose trying to do this in a subsequent communication. K. O.

March 30, 1871.

For the New England Farmer.

DEPOPULATION OF RURAL TOWNS IN NEW ENGLAND.

This subject is one of some import, and to be fully understood it must be viewed from different stand-points. Your correspondents have in the main considered it as a retrograde movement, a "backward tendency" in the march of civilization, and the inevitable result, in their opinion, will be a general depreciation in the value of farm lands and all agricultural interests.

They sing in plaintive tones of "neglected homesteads," and notice "instances, where the cellars and foundations over which once stood the homes of prosperous families outnumber the present dwellings of its inhabitants." They tell us unless something is done to stop this tide of migration "that ere long wild animals will return to their former haunts amid the hills and valleys of our dear old New England."

For once we must beg leave to differ in opinion from those much esteemed correspondents. The cause of this disagreement may perhaps be traceable to the fact that we are located in one of those rural towns that are becoming depopulated, and know but little of the outside world. This depopulation of purely agricultural towns we regard as the legitimate result of progress in the art and science of agriculture.

Improved implements and machinery have been brought into use, with which the labor of the farm is performed in less time, and by an entirely different class of laborers than formerly.

For instance we now see the youth of 14 years accomplishing as much work with a mower as a number of strong, robust men would in the same time with scythes. A few hours later in the day, we see the younger brother of that youth seated upon the tedder driving through the field turning the hay. In due time he is followed by a boy still younger with a horse-rake, and we have only to look once again to see the trio amusing themselves with the horse fork while they remove the hay from the cart and deposit the same upon the top loft in the barn. In a word, the haying season, which once required all the available help, now calls for boys only, and it is merely a pastime for them. This may have the appearance of an overdrawn picture, yet it is precisely what our watchful eyes behold in connection with every department of farm labor. We see it in the preparation of the soil, in sowing the seed, in the after culture, in harvesting farm crops and transporting them to distant markets.

Formerly the farmer that raised two or three acres of onions, must spend days and perhaps weeks of laborious, back-breaking work sowing the seed, now the *stripling* will accomplish the same work in a more satisfactory manner with a seed-sower in a single day, having spent an hour after his mid-day meal perusing the "NEW ENGLAND FARMER" or some other first class periodical.

Once our surplus labor, and draught animals enough to consume all the forage crops we could grow, might have been employed transporting farm products to market and returning implements, fertilizers, seeds, &c.; but the railroads come in and carry our freights for about twenty per cent. of what it formerly cost to do the same work.

Again, fertilizers are introduced that can be used in a more concentrated form,—new and better modes of cultivation are adopted, whereby farm work is very much abridged, and the tendency of every progressive movement is to diminish the amount of labor required to produce a given quantity of farm products.

The increase of population in the country has averaged about 33 per cent. each decade of years, and the demand for agricultural products would naturally increase in about the same ratio. Will it employ a larger number of laborers with all these improved implements and labor saving machines to supply this increased demand? Certainly not. On the other hand the number of farm laborers grows less each year, and the census reveals the fact that this purely agricultural town is becoming depopulated. While the number of laborers has decreased, our lands have become more productive and their market value has increased. These rapid strides of advancement in the art of agriculture very naturally suggests interesting considerations. Will the manufacturing and commercial industries of New England be able to supply this unparalleled demand for implements, machinery and fertilizers?

Will the accumulated wealth of her manufacturers, merchants and bankers create a demand at remunerative prices for this largely increased amount of farm products? If this can be accomplished without attracting labor or capital from agricultural pursuits, crops may be introduced that will more fully develope the productive qualities of the soil and profitably employ every class of laborers; then would the ratio of increase in the population of the rural towns exceed that of the manufacturing villages. But why explore the broad field of impossibilities to find a remedy for this so called *evil* or to prevent migration?

It requires no great stretch of imagination

to see that with the aid of all these labor-saving machines and increased facilities for performing farm work, the same proportion of the population that were formerly engaged in agricultural pursuits would in a brief space of time glut every market in the known world with farm products. The demand for these products not being equal to the supply, the price must fall below the cost of producing them.

We must then accept the present condition of affairs, and those who choose to discontinue the pursuit of agriculture, and seek more advantageous modes of employing their labor and capital, must be allowed to do so, even should some portions of the country become densely populated while other localities have but a sparse population. Under these circumstances there is no danger that the earth will become depopulated or fail to produce an abundant supply of food for both man and beast; and so long as the clatter of machinery is heard upon every farm we shall be more fearful of the "bulls and bears" of *State* street and *Wall* street or the *Royal Exchange* than of the wild animals that once inhabited these beautiful valleys.

We may, however, be considered unequal to our task should we neglect to point out a course by which population would be scattered more evenly over the face of the earth; and we will suggest the following as very simple, well defined and sure to produce such unwished results. First—close the doors to the agricultural college, and put out the light of science which radiates from that institution,—shining upon the farmer's path-way—teaching him how to make his farm more productive without increasing the cost of cultivation. Again—suspend the publication of all those scientific and agricultural periodicals which give the farmer practical hints and suggestions concerning his business and inspire him with confidence in undertakings which would otherwise be abandoned upon the first failure; or throw aside and discontinue the use of improved implements and labor-saving machines. In a word, limit the farmer's knowledge to his personal experience and observation, or the quality of his tools to his own ingenuity and skill, and the work is accomplished—the demand for manufactured articles destroyed, and we shall see people flocking from villages to rural districts, some to dig their bread from cultivated fields, others to subsist upon the spontaneous productions of the earth or the precarious products of the chase.

May it be our lot to protest against any of these movements which are calculated to block the wheels of progress, or roll back upon the rural towns a tide of migration that would jeopardize the interests of agriculture or happiness of the human family.

L. P. WARNER.

Sunderland, Mass., March, 1871.

For the New England Farmer.

USES AND VALUE OF MUCK.

An Essay read before the Concord, Mass., Farmers' Club by GEORGE F. WHEELER.

The term *muck* is usually applied to the vegetable deposits of swamps and rivers. In origin, muck is simply the product of growths, on the same spot, of wild plants, grasses and leaves that have withered and decayed, to be followed by other growths, until a bed of rotted vegetation is formed. The material in its natural state is filled with water, and some of it is impregnated with acids which are hurtful to vegetation. The best muck is usually found in comparatively dry localities, between hills, where the water that caused the deposit has been removed.

The muck we should seek to obtain for composting is in a state so nearly decayed that a little more heat and moisture will make it available for plant food. Such a product will have a rich, black color, and when dry it will pulverize easily between the fingers.

In preparing it for use it must be dug from its natural bed to deprive it of its moisture; that the frosts of winter may act on the particles, helping to decompose it more thoroughly, and removing any acids that are injurious to vegetation. It will shrink in bulk nearly one-half by this method, so we save quite an amount of labor in handling.

Many fail to see the advantages of using muck, aside from an absorbent to the stable or compost heap, by not understanding the advantages it has in its application to the soil. We are so impatient for results, that if they are not satisfactory at once, we are very ready to condemn the means used. By the application of muck to the soil, we tend to loosen it, thereby allowing the air and heat to move more readily through the soil. It is surprising to see how mellow a stiff, heavy soil may be made by a thick coating of muck. The soil most benefited by muck would be a light, dry, sandy one; such a soil is more subject to the extremes of heat and cold. The darker we can make the color of this soil, the more it will absorb heat by day, and at night the dark particles drink in moisture from the air, that the sand would not. On all soils it will be of an ultimate benefit (excepting those rich bottom lands already rich in humus) in enriching and acting mechanically, to loosen and lighten them so that vegetation is encouraged as it can be in no other way, excepting partially by ploughing in green crops.

If we will not be too impatient to see the results of the application of muck, we shall be satisfied in a term of years of the improved condition of the soil by the crops we produce. I am fully satisfied with the applications I have made of muck to a large asparagus bed: that increased its productiveness *one-third*, besides making the soil looser and more easily worked. Muck is of great importance as a composting

material. To be a good absorbent it must be dry, and in order to keep it so it must be housed. A person to use it to the best advantage, should provide himself with some suitable place to store it at a dry time. As a substance to absorb the urine of our stalls, it is of much value. Muck is very slow in decomposing. If applied to the soil alone, its value is at once enhanced, if, before applying it to the soil, we mix it with some manure to heat it, and render the particles soluble for plant food. An English writer proved by experiment that one part of horse dung was capable to bring three or four parts of muck to a suitable state of fermentation. I think most people that use it here in composting, add one-half muck to as much manure. Just how much we can profitably use, each must decide for himself from his own observation and the opinions of others. I think I found it profitable the last year to use two-thirds muck to one-third manure in composting. Besides this, I use large quantities on the land in its natural state.

Farmers should seek to know the resources of their own farms before purchasing any of the commercial fertilizers offered for sale. The best kinds only admit in their analysis of three to five per cent. of ammonia. A table of analysis prepared by Prof. Johnson, of the Connecticut State Agricultural Society, from thirty-three samples of muck, yielded from 1.37 to 2.14 per cent. ammonia in its natural state; when dry from 3.10 to 5.41, averaging about 3.50. It is hard for farmers to accept the analysis given by Dr. Dana, making muck nearly or quite equal to cow manure. I think it would be very hard to produce facts to show it so satisfactory. Enough facts can be produced to show, to any doubting mind, that it will pay to use it largely in our compost heaps. The results have certainly exceeded my expectations.

ORCHARD GRASS.

From an essay by L. F. Allen, Esq., Black Rock, N. Y., in the *Tribune*, we make the following extract:—

We have grown this grass constantly—not in large quantities, to be sure—for the past 30 years, and know its value for the various purposes we have mentioned; but for *soiling* stock in the summer season we consider its qualities the most eminent. A few of its qualities will be stated:

First: It starts early in the spring, with a broad, oat-like leaf, growing rapidly, and arriving at its highest condition of excellence when in early bloom, which is about the time of the blossoming of the common red clover, and, if made into hay, fit to cut at the same time. Yet, for soiling purposes, it may be cut some days, or even some weeks, earlier. It is better, however, for the full amount of nutriment it will afford, to wait until the flower is fairly developed. Its qualities are sweet, nutritious, abundant in production, tall as ordinary oats in growth, and a heavy burden to the area on which it is produced. If suffered to stand long enough to mature its seed, the stalk fiber becomes hardy, harsh, and unpalatable to stock; therefore it must be cut before it arrives at its seed-ripening condition, as is the case with most other grasses for *dry* forage purposes. No grass which we have ever grown has yielded so heavy swath as this, nor one from which so much cattle food to the acre can be grown, aside from Lucerne or Trefoil, which our American climates will not consecutively, year after year, produce. No grass, not even red clover, springs up so rapidly after cutting as this. We have known it in showery weather start fully three inches within a week after cutting, and so continue for repeated cuttings throughout the season, retaining its verdure into the latest frosts, and then affording a pasturage sweet and nutritious, inviting to all kinds of farm stock inclined to grazing.

Second: As hay, its quality is good, *when cut in its early flower*, but inferior when gone to seed, attaining then a woody fiber, as before remarked, yet, when cut and steamed, equal in nutritious quality to other *late*-cut grasses. The steaming or cooking process reduces its fibrous stalk to a comparative *pulp*, rendering it palatable to the taste of animals, and congenial to the action of the stomach for nutritious uses. As hay, it cures readily; its long growth renders it easy to rake and handle; it stores compactly in either stack or mow; cuts easily with the hay-knife in the mow when fed dry in winter, and is every way as convenient a *long* fodder as any other. Such are its qualities for hay.

Third: As soiling stock through the summer months is now coming rapidly into practice, we can do no better service to the farmer—more particularly to the dairymen—than to recommend the Orchard grass for that purpose; and for the following reasons: It is early. It grows continuously throughout the summer and fall seasons. It is *permanent* in its occupation of the soil, having a strong fibrous root; maintains its hold in clumps, or tussocks, against any and all other grasses, even the blue grass—which crowds out almost every other—making no inroads on its possession when once fairly rooted. We have a field of it, on a strong clayey loam, which has stood for more than 30 years. It has been cut for soiling; it has been cut for hay; it has been pastured; it was first sown with red clover and timothy, which it long ago run out, and, although the white clover and blue grass venture their presence to a limited extent among it, the orchard grass retains its supremacy, and, breast-high at maturity, lords it over its diminutive trespassers in a bounteous crop, while its humbler attendants, good in

their place, modestly fill up a great, nutritious undergrowth at the bottom.

It has been objected to the orchard grass that it grows too much in *stools*, or *tussocks*. If it has a fault, that is one of them; but full seeding will measurably remedy that. It does not stool or spread so universally as the blue grass, or perhaps some others, but it forms a strong, compact root, and that root it holds firmly, enduringly, and, if given a moderate amount of fertilizing matter, its roots fill the surface, and there they stay, yielding to nothing but the utmost abuse by treading out in spring by heavy cattle—which should never be allowed on any grasses—or the plough itself.

The seed of the orchard grass, from its absence of general cultivation, is not found in abundant quantity at the seed-stores of our towns and cities, and the price may be dear compared with timothy, and the clovers; yet not so dear as to prevent the farmer from obtaining it in sufficient quantity for trial, and from a small area of ground, to supply his own wants in seed hereafter. It yields bountifully, and when ripe, which is easily known by its assuming a yellowish color, it may be cut and bound in sheaves like oats, or mowed, cured, and threshed out, like timothy. The entire process of its cultivation is as simple as any of our ordinary farm grasses.

ARNAUTKA WHEAT.

A correspondent of the *Maine Farmer*, who has grown this variety two years from seed obtained from the Agricultural Department at Washington says:—Last season, 1870, I raised about a dozen bushels. It is quite a pretty growing variety, short, stiff, bearded and the heads are short, plump and well filled. The heads are of a square shape, and often of a bluish black color, especially before ripening. It was not injured by the midge, and in productiveness compared well with the leading varieties cultivated. The straw is tough, and the heads tougher. There is no danger of any wasting and falling out in the field, for it is no easy matter to thresh it, even with a machine. Quite a per centage of the yield last year was lost or left in the straw. The threshers said it was impossible to get it all out of the straw. A few weeks since this wheat was sent to the mill to be manufactured into flour, but it was only after considerable urging that the miller would consent to grind it. He said that he had refused to grind several "grists" of it, and had sent it away as the kernels were so hard and flinty it was almost impossible to flour it. However, he put it through, and the result was a very fair article of flour, with a large amount of "middlings" and bran. The flour is sweet and eatable, but the per centage of flour was hardly equal that from our best varieties of wheat. So much I can say from experience. I shall not sow it again. Perhaps others may have had a different experience.

TOPICS FOR FARMERS' CLUBS.

The following list of subjects for the winter meetings of the Waltham Farmers' Club for 1871-2, have been announced, together with time, place, and disputants for each meeting. This gives time for thought and preparation on the part of those appointed to engage in the exercises. The programme may be of interest to the members of farmers' clubs in other localities.

The results of farming in 1871, and what has been learned that will be beneficial in the future.

Has the importation of the foreign breeds of cattle, horses and other stock been a benefit to the community?

Trades and trade unions; their influence on the business of the community. Would a combination of the farming interests be a benefit to their general prosperity?

Woodland and forest trees; their advantages or disadvantages to the farm and community.

What are the causes that have led to the decrease of the farming population of New England, and to the deterioration of its soil?

Farms and farmers; what are the indications of good farming?

Swine and poultry; the best breeds of each, and the best method of keeping and feeding, and the profit or loss.

The roads of Waltham; the best and most economical method of making and repairing them throughout the town.

Fruits and vegetables; the proper time to gather and the best way of preserving them.

Milch cows; the feeding and management in regard to health and the production of milk.

The raising, feeding and training of horses for speed, road and farm work.

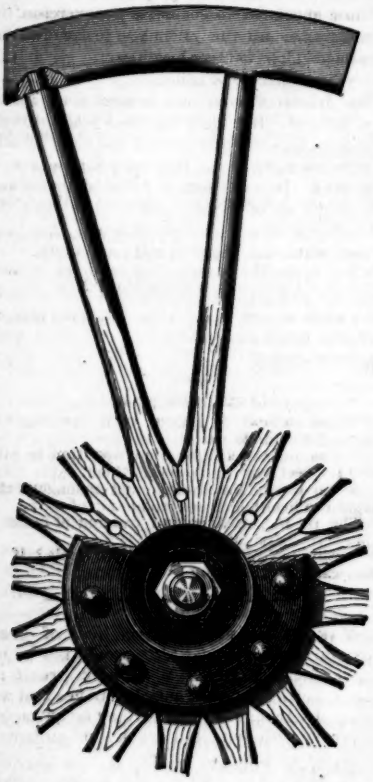
Farming of Waltham; is it profitable? if not, how can it be made so?

MAKING SOAP.—A great deal of grease may be saved for soap that would not be nice mixed with soap. Put all your grease in a large kettle, (scraps, marrow-bones and anything else from which grease may be extracted) cover it with lye, and let it boil an hour or two, then put a quart, more or less, of course salt, which will separate the grease from the rest and rise to the top; let it boil half an hour, then fill it up with cold water, and let it stand till cold. Take all the grease off the top, throwing away the bottom, which will contain a great deal of sediment. Then put the grease and lye together, and boil, and you will not fail of having good soap, if the lye is good. A trough is much better than a barrel to keep it in, as the hoops are liable to burst.—*Farmer's Wife, in Maine Farmer.*

—The *Gardener's Monthly* says liquid manure made from rotten wood is a capital fertilizer for violets. Once, he thought, as shady places were the natural places where violets grew, that rotten wood would be a good thing in the soil, and so made the experiment.

ARCHIBALD'S IMPROVED SPOKE WHEEL.

The accompanying engraving illustrates a new *Spoke Wheel*, invented and manufactured by Mr. E. A. ARCHIBALD, of Methuen, Mass., and shows pretty fully the principles of its construction. The spokes have their ends,



which enter between the flanges of the hub, made in the form of truncated wedges, and each of them has formed in it a semicircular cutting, which, when the spokes are placed together in the wheel, as shown, form a bolt hole to receive one of the bolts which pass through the flanged plates of the hub. They thus act as an arch of solid wood, so firmly clamped together as to give great strength at the part of the wheel receiving the greatest lateral strain; and the wood being left uncut at the perimeter of the flanges, has a larger sectional area than is found in many other forms of spoked wheels.

n team wheels the axle boxes should be true with, and so firmly secured to the hub as to obviate all danger of displacement. The spokes should be so firm in the hub that neither wear, weight, nor drought will cause them to work toward the centre and loosen the tire, and so *held by the hub* that the absorption of moisture shall not dish or cramp them. The spokes should be made to fit the felloes in the most perfect manner, without checking or splitting. If properly made and of well seasoned stock, the wheel becomes one homogeneous whole, all strains being distributed to all parts of the wheel, rather than concentrated upon single parts, as is the case when everything is not held firmly in its place.

This wheel has been used in the most trying climates, and under the most trying circumstances, and has shown itself capable of great endurance. For further information in relation to this invention, see advertisement in another column.

EXTRACTS AND REPLIES.

SWELLING UNDER A COW'S TONGUE.

MR. EDITOR:—I am a reader of the NEW ENGLAND FARMER, a paper from which I have received much valuable information. And now, I wish to consult you concerning a sick cow, of which I am the owner.

Early in December last, as the cow came to the barn one night, I observed a swelling under her tongue. It was so large at first, that the base of the tongue was pushed up so as to render the breathing of the animal quite difficult. Soon, however, the swelling subsided in part; but it returned to its former size, and has continued ever since to vary in its dimensions from time to time. The animal's appetite has been good until the last week. But she now scours badly, has lost her appetite and is exceedingly weak.

The cow will, probably, be dead before this reaches you; but I wish you, or some of your contributors, to explain the nature and cause of the disease, and prescribe the treatment proper for such affections. S. M.

North Charlestown, N. H., 1871.

REMARKS.—The swelling described by our friend "S. M." was, doubtless, an enlargement of the *sublingual gland*, a small body situated under the tongue, and which like its associates, the *parotid* and *sub-maxilary* glands, secretes *saliva* for the purpose of aiding in the process of digestion.

Such enlargements of the sub-lingual gland may be caused by inflammation, either acute or chronic; by the presence of worms; or by the development of a malignant disease, like scirrhus or cancer. In the case under consideration, we judge the enlargement to have been caused by acute inflammation; or else by the presence of worms. If inflammation was the cause, it was probably produced by the obstruction of the duct or pipe of the gland which discharges the saliva into the mouth

which is called the *excretory duct*. This obstruction might have been caused by something taken into the mouth with the food; by a bony or chalky concretion produced by an excess of alkaline or of saline matter in the blood; or, by the presence of worms.

But we have said the swelling might have been caused *wholly by worms*—indeed, we think such was the case. We believe that the sub-lingual gland was a *nest* of small, thread-like worms, called *filiaria;* and that other portions of the body, particularly the wind-pipe and bronchial tubes, were infested by the same little creatures. And here we take the liberty to digress so far as to remark that on further investigation and reflection, we are compelled to entertain the opinion that the steer whose case was described in the weekly FARMER of March 18, 1871, was killed by the same little parasites—the *filiaria bronchialis*.

The weakness of the cow, whose case we are considering, was produced by the diarrhœa and loss of appetite, and these were produced by inflammation of the mucous coat of the alimentary canal, and if our theory respecting worms be correct, that was produced by the worms.

The treatment proper in such cases must, of course, depend mainly on what we may know concerning the cause of the affection; and also, on the particular features of each individual case. If obstructions exist in the gland or in its excretory duct, they should be removed, whatever they may be. If there be inflammation of the gland and surrounding parts, that should be reduced if possible, by proper applications. *Tincture of iodine* is the best thing for such a purpose. If worms are known to exist, or if there is reason to suspect their existence, a strong solution of *carbolic acid* should be applied freely to the part or parts affected, so far as they can be reached; and a weaker solution of the same article should be administered internally, and repeated at intervals of three or four hours. A proper dose of this medicine would be, as we suppose, an ounce or two of a solution as strong as a man can hold in his mouth, and this should be still further diluted with an equal quantity of water.

If we had a cow affected with *filiaria bronchialis* we should not expect to cure her; but we should have more confidence in carbolic acid than in any other article with which we are acquainted, and should use it. J. H. S.

CORN FOR GREEN FODDER.

I have a piece of ground of two-thirds of an acre that I wish to sow to fodder corn. Please to tell me how much corn I shall want to an acre, what kind is the best, and whether broadcast or in drills. I want it for a green bite in summer, when things are dried in the pasture. A YOUNG FARMER.

Deering, Me., 1871.

REMARKS.—Large quantities of "fodder corn" are raised annually by the milk producers in the country within twenty miles of Boston. About four bushels to the acre is sowed, and it is usually sown in drills. The land is furrowed in rather wide and shallow drills, and if not liberally manured and ploughed under, some fertilizer is sown in the drill, such as ashes, home-made guano, or any of the special fertilizers that can be relied upon. Old compost manure is an excellent stimulant, and would be quite likely to carry out the crop well.

If the corn is sown broadcast it cannot be cultivated, so that there may be a crop of weeds as well as corn, if the weeds get an early start before the corn occupies all the ground. If in drills, the horse and cultivator may keep the crop clean, with a very little hand labor added.

The fodder of *sweet corn* is much preferred by most farmers. It is more nutritious than the common corn, does not grow so rank and consequently there is less waste in it. It is bad policy to sow it *very thick*. In such case it excludes the air and sun, grows up of a pale, yellow color, and the cattle do not eat it with that eagerness that they do corn which has plenty of room and sunlight.

When in drills the grains should not be strewed along in a straight line, but scattered over a space some eight or ten inches wide. The crop may be harvested much more easily from drills than from broadcast sowing.

PLANTS FROM SEEDS.

Will you or S. O. J. inform us if the Begonia Rex, and Richardia maculata are propagated from seed; if so, how long before they will come to maturity? The seeds are recommended in the catalogues but we cannot always trust them. Is the Clianthus a desirable house plant?

Keene, N. H., April, 1871. ANNIE DURKEE.

REMARKS.—The above named plants are grown from seeds, but I have never attempted their culture. Probably they would not come to maturity for two or three years, at least. Such green-house plants require very careful treatment to vegetate from seed; and Miss Durkee would have much more satisfaction in the plants if she procured them from the florists. The expense would be about the same, and she would be certain of obtaining what she desired. At the Innisfallen Green-houses, Pittsfield, Mass., she can obtain a Begonia Rex for from twenty-five to fifty cents; and a Richardia maculata for fifty cents. The latter requires to be kept dry in the winter, and is started in the spring like a dahlia.

I have never seen a Clianthus. The seeds that I planted last season refused to germinate. The "cuts" of it are very attractive, and it is highly praised. In California it grows in great perfection, and is called the Glory Pea. S. O. J.

URINE AS A FERTILIZER.

There is a urinal here in quantity about one barrel per week; it is contemplated to apply it to a farm about one mile distant, and the question is, How can it be best applied? The farm is adapted to corn, potatoes and grass. Is there any cheap substance known to chemists by the use of which the portion of urine nourishing to crops can be separated and utilized, thus saving the expense of transporting the waste portion? If you would

give me a little light on this subject I shall be very thankful. EDWARD WILLIAMS.

Newton, N. H., April, 1871.

REMARKS.—There is no process familiar to us whereby the most valuable portions of the urine could be separated economically from its less valuable parts. The cost of any chemical manipulations to separate it, it seems to us would be much larger than the transportation of the whole to the field where it is to be used.

Our suggestion would be to have an ample bed of good, dry muck always on hand at the farm, mingle the urine with it from time to time, and throw it into a compact heap, under cover, or into barrels, until wanted for use. In this way all the value of the urine would be secured, together with the additional value of the muck, which would not be inconsiderable, even if used on clayey loam soils; but on some of the plains in your region it would be of very great benefit.

LOADING A WAGON.

You must permit me to differ somewhat with both Mr. Sanderson, and the article in the FARMER of March 11. Mr. Sanderson carries the idea that the nearer he can get his load to his team the easier it can be moved. This is true in the case of a drag, for there he will get a lift on the load. But let him take a wagon body twelve or fourteen feet long, with the wheels at equal distances from each end of the body, say not more than eighteen to twenty-two inches, and load this wagon equally from end to end, say about eighteen to twenty hundred pounds; then a man can lift either wheel, if on level ground. But take this same load and put it on a short body, say about eight feet, as commonly used, and try your strength on the wheels. I doubt whether you can raise one of them, unless you are a very strong man. The same weight is on the wagon body in both cases, but in the first case you have a longer lever purchase. Now if you can lift a wheel easier on a long cart body when at rest, must it not rise a small obstacle easier when in motion? You may raise one objection, that is, whenever you are rising a hill and the cattle are beginning to descend, then there is a sharp nip. This I will admit. I have drawn long timber on wheels when they were a good ways apart, when if the timber had been cut into eight feet stuff, the same team could not have drawn the load. I am in favor of a long body and the wheels at equal distances from the ends, and evenly loaded. S. DENHAM.

South Hanson, April 5, 1871.

THE RIVER APPLE.

In the March number of the NEW ENGLAND FARMER, page 113, the *River apple* is highly praised. Where is it to be obtained? None of our nurserymen around here know anything about it.

Please let me know where I can get a tree of it, or at least some scions, and oblige

Charlestown, N. H., 1871. W. W. GREEN.

REMARKS.—The above note was mislaid or it would have been answered before.

The *River apple* originated in Massachusetts, and though not abundant, is not uncommon here. Mr. Downing's account of it says: Tree of slow growth, but productive. Fruit medium to large, oblong, slightly conic, ribbed. Skin yellow, striped and shaded with dark red, with a slight bloom. Stalk medium, deeply planted. Calyx small, closed, set in a basin of moderate depth. Flesh coarse, juicy, tender, pleasant, sub acid. August and September.

In our experience, the tree grows as rapidly as do most trees. We have no doubt but Mr. J. W. Manning, of Reading, Mass., will furnish trees of this variety. We will send to your address a few scions.

SEEDING DOWN WITH CORN FODDER.

If the fodder question is in order, we would add a word to Mr. Cheever's argument. We believe in corn fodder. We raise no green or ripened corn. Grass, or a substitute, is the most valuable crop we can raise.

We have sowed corn broadcast upon land hoed the year previous, and grass seed with the corn. The corn was large enough and the crop of hay the next year as good as it would have been if grain instead of corn had been sowed,—so it seemed; at any rate, there was a *good* catch of grass. We have spread manure upon witch grass sod, where it was smooth, turned it under and before the harrow was put upon the soil dropped corn between the furrows, omitting half the spaces, making the rows as wide as two furrows, and using about three bushels of seed to the acre, then harrowed the ground smoothly, with no other cultivation, and had enough, with a good crop of witch grass, the next year, without cost of seed or hoeing. We have some corn fodder now, April 8, that was dried last fall. We think one-third corn fodder and two-thirds hay as good as all hay and no corn fodder.

Don't ask us how we cure it for winter, for we don't know the best way; at any rate, we are not quite satisfied with any method we have tried. It is very difficult spoiling it after it has been cut at the last stage of its growth to make fodder, if kept from falling down.

We raise corn fodder to secure a crop of hay the next year, and that with the least labor possible. We have failed to get a catch of grass among corn, on dry land, in dry seasons; but we think grass is as sure among corn as it is among grain. P.

Mast Yard, N. H., 1871.

RELIEVING CHOKED CATTLE.

Some three weeks ago there appeared in the FARMER an inquiry for some safer and more certain method of relieving choked animals, than the usual way of trying to crowd the obstruction down into the stomach, or smash it in the throat; and as I have seen no answer to the inquiry, I will venture to give you my remedy.

As soon as the animal is discovered to be choked, hold its mouth firmly open and drop low down upon the roots of the tongue a small handful of fine dry gunpowder, and let the creature loose. This causes the animal to cough violently, when the obstruction will immediately be removed. I have long been familiar with this manner of treatment, and have seldom, if ever, known it to fail of giving immediate relief if administered in season, before the throat is too badly swollen. H. B. S.

Vermont, April 3, 1871.

ALSIKE CLOVER SEED.

I have been reading a book that speaks very highly of alsike clover. I should like to sow a little this spring just to try it, but I don't know where I can get it or the cost per pound.

AMOS BLANCHARD.

South Royalston, Mass., April 3, 1871.

REMARKS.—The agricultural seed dealers in Boston have the seed for sale at seventy-five cents

a pound. A little for trial may be sent by mail at eight cents per pound, for postage.

EXPERIMENTS WITH FERTILIZERS ON TOBACCO.

I tried an experiment last season with seven different fertilizers on tobacco, and the result was that sea fowl guano yielded the largest quantity and the best quality leaf. The land was all manured alike, divided into seven portions and the fertilizers used in the hills, the same quantity in each plot. R. A. BELDEN.

Northfield, Mass., April 12, 1871.

AGRICULTURAL ITEMS.

—In California, poplars grow from ten to fifteen feet in a single year.

—Essex County, Mass., raised 25,000 barrels of onions valued at $100,000, last season.

—Rutland County, Vt., possesses 17 cheese factories, averaging 350 cows each.

—Grasshoppers have made their appearance in Maine.

—Mr. S. A. Hamilton, of Garland, Me., has a pair of three-year old Hereford and Durham steers, well matched, and weighing 3800 pounds.

—Wisconsin has 100 cheese factories within its limits, the most of which are situated in the Green Lake country, near Ripon.

—The Michigan Agricultural College has 146 students, of whom eighty are freshmen. Of the new students, seventy-five per cent. are farmers' sons.

—R. W. Haines, M. D., recommends, in the *Rural New Yorker*, for calves and pigs scouring, a teaspoonful of calcined magnesia in sweet milk thickened with corn meal. For a calf heap the spoon, for a young pig less.

—Several extensive hog growers of Henry Co., Ill., say that feeding steamed food is a perfect preventive of the hog cholera, and that no one there this season, who fed steamed feed, has lost a hog by the cholera.

—The Iowa Agricultural College entered on its third year March 8. The *Homestead* says the Freshman class numbers about 75, the Sophomore 40 and the Junior 32, a total of 147, of whom 30 are ladies.

—The marsh of 150 acres in Lenox, Mass., which Albert Belden is draining, was once a lake, and, doubtless, a favorite haunt of the Indians, as Mr. Belden has already discovered three of their canoes —one two feet below the surface of the bed of the main channel, and in a perfect state of preservation.

—E. Wilson writes the *Rural New Yorker* that for twenty years he has removed films from cattle and horse's eyes without failure. Apply clean lard, warm or cold, which ever way it can be got into the eye best. Its application will cause no pain, and should be applied until the film is removed.

—The average weekly price of eggs in Chicago for the past five years is stated at twenty-two cents a dozen, by the *Prairie Farmer;* as greater numbers are received during the time of low prices, the average price for all received is put at seventeen cents.

—The dairy business in Medina County, O., says a correspondent of the *Ohio Farmer*, is playing the mischief in that county, by lessening the number of farms, and consequently diminishing the number of farmers. The big fish are eating up the little ones.

—Everything that is liable to generate gas and foul odors should be removed from the cellar on the approach of warm weather, and the room well ventilated. Strewing lime over the floor and whitewashing the walls, is a good means of disinfecting. A little care at this time may save many doctor bills.

—Mr. Meehan, in the *Weekly Press*, says that botanists have no better reason for saying that Indian corn is indigenous to this country than that it was found here when the country was discovered by the white man. Assuming that America was known to the Chinese long before, he thinks that it is to them that we are indebted for our corn, as it has certainly been known in China for a thousand years.

—*The Farmers' Home Journal* speaks of a field of thirty acres of wheat which suddenly changed from a fine vigorous appearance to a sickly yellow. Some attributed it to the fly, but no signs of its presence could be found. On pulling up a stalk its tap root was found to be full of little worms, about as thick as a sewing needle. An examination of other stalks disclosed the presence of the same worms, and it was concluded, very naturally, that the sudden and unfavorable change in the appearance of the wheat was due to these worms.

—The Oshkosh, Wis., *Times* reports that a hop grower near that city a year or more since, sent eight bales of hops to a commission firm in Philadelphia. A few days since he received a statement showing they had been sold at prices ranging from one to six cents per pound, the total receipts being $25.05. The charges were $23.69 for freight and drayage; $8.00 for commission; $7.20 storage and insurance, making a total of $38.89, leaving a balance against grower of $13.84, to which is to be added $10.00 paid for the packing.

—A correspondent of the Germantown *Telegraph* says, the natural soil of a large portion of the American gardens could be improved and made to yield heavier crops by an admission of sand. In many sections where clayey soils prevail, gardens thus treated would be rendered more friable and could be worked much earlier in spring. Also that many garden-soils which are naturally light, sandy, or gravelly, frequently do not possess sufficient strength to retain for any length of time the manure applied to them; hence, an application of heavy loam will be found beneficial in more than one point of view.

ASHES, LEACHED AND UNLEACHED.

Inquiries are frequently made, regarding the comparative value of leached and unleached ashes; and in order to answer them, let us consider the nature, or chemical constituents of the two heaps as we find them at the soap-boiler's. In one bin are the dry, fresh wood ashes; in another, the wet, lixiviated mass, as thrown from the leach tubs. If the former are like the ashes produced in our own dwelling, by burning in the open fire-place, oak, pine, hickory, birch and maple woods, a bushel will weigh about fifty pounds, six and three-fourth pounds of which are soluble in warm water. Of the soluble constituents, there are a little more than four and one-half pounds of potash and soda, the remainder being the sulphuric, muriatic and carbonic acids with which the alkalies are combined. Forty-three pounds are insoluble in water, and consist of

Carbonate of lime	32 pounds
Phosphate "	3 "
Carbonate of magnesia	4 "
Silicate of lime	3 "
Oxides of iron and manganese	1 "

It is the work of the soap-boiler to remove from ashes what is soluble in water, which is accomplished in the leach tub; and this is all the change they undergo in this establishment. The ashes go in dry, holding the soluble and insoluble substances; they come out wet, deprived of six and three-fourths pounds of potash and soda. It should be stated, however, that about one pound of quick lime is added to each bushel of ashes in the leach, to render the lye caustic. This adds one pound more of lime to the insoluble residuum, or the leached ashes, making it weigh, if it was free from water, forty-four pounds. In leaching, the ashes do not change much in bulk, but they are largely increased in weight from the contained water.

Now, what is the commercial value of the ashes before and after they pass through the soap maker's hands? In the dry state the

Four and one-half pounds of potash and soda are worth six cents a pound	27
Other soluble constituents	3
Thirty-two pounds carbonate of lime	3
Three pounds phosphate of lime	6
Three pounds silicate	0
Iron and maganese	0
	39

This estimate which is a fair one, gives a value per bushel of thirty-nine cents; that is, the substances found in a bushel of good sound wood ashes are worth in the market that sum at the present time. By leaching the ashes, thirty cents of the commercial value is removed and converted into soap; this leaves nine cents as the value of the constituents of a bushel of leached ashes. The silicate of lime, and the metals, practically have no market value, and are not considered.

What is the agricultural value of the two forms of fertilizers? The ashes holding all their normal constituents are worth more applied to soils than for other uses when separated, dollars and cents being considered. A bushel judiciously employed, will return in most seasons sixty or seventy cents' worth of products the first year. The potash and soda combined as they are in ashes, in the form of carbonates, sulphates and silicates, are in precisely the right condition to be readily assimilated, and also to aid in rendering assimilable, many important constituents of the soil.

The leached ashes also are worth more to the farmer than nine cents a bushel. Relatively they are worth more for soil employment than the unleached, regard being had to the commercial value of the substance when separated. A good honest bushel of moist, leached ashes, will give returns the first year of the value of fifteen or twenty cents; and owing to the peculiar decomposing influence upon the insoluble constituents of the soil, of the silicates, &c., remaining in the mass, their influence extends outside of themselves and continues for a long time. A pound of phosphate of lime found in ashes is worth more than a pound of bone dust, as it is in a condition to be readily taken up by plants. The carbonate of lime is worth more than chalk of the same agent in other forms, inasmuch as it has once passed through plant structures.

The estimates here presented are only rough ones, but they are sufficiently exact to serve as a guide in learning the value of leached and unleached wood ashes. We have experimented considerably with ashes in both forms, upon soils of various kinds, and what we have here stated is the result of our own practical experience.—*Boston Journal of Chemistry.*

SPRING CARE OF COWS.

Dairymen during the past few years have very generally adopted the plan of having cows come in early in the spring, and there is wisdom in so doing, for a greater product of milk is obtained and the health of the cow better preserved. Farmers have learned that by this means, milk fever may be avoided, and that garget, caked udder, &c., which very materially detract from the prospective profits on the dairy, may more generally be averted. They understand that when a cow comes in during the cool weather of spring, while kept upon dry feed, there is but little danger from diseases, and that when this event takes place after the animal has been turned to grass, and the weather has become hot, the case becomes hazardous.

Cows that come in at this season of the year, need special care, however, or they will not yield through the season the expected profit. Food amounting in nutritive qualities to an equivalent of the milk secreted, must be given, or there will be a draft upon the system, reducing flesh and strength, and so checking the general vigor and animation of the

constitution that full recovery will not be made during the entire season.

Corn meal and corn in the ear is fed a great deal by dairymen in the spring, and it is one of the best grain feeds that can be given to make flesh and fat, but one of the poorest as a direct milk producer. Of course, a cow in good condition will secrete more milk than a poor one, and so far as this goes, corn is a good feed. Wheat bran, mill stuff or middlings, cotton seed cake meal and oat meal are all good milk producers, but a cow fed upon these will not increase in flesh as rapidly as if fed upon corn. Wheat bran, which is one of the very best feeds for milk producing, will not fatten a steer. Oat or corn meal mixed, or corn meal with bran and middlings fed together are profitable, one to keep up the strength of the system, and the other to produce milk.

Farmers who have roots to feed at this time, are wise and fortunate; roots are good regulators, and put the animal in the right condition, while upon hay, to change to pasture feed. We regret that farmers do not more generally appreciate the value of roots for stock feed, and give their cultivation more attention.—*Ohio Farmer.*

BEES IN APRIL.

Owing to the very small harvest of honey last season in our State, it is but reasonable to expect that a great number of stocks must die of starvation this spring, unless properly cared for in due season. The fact that a certain colony has wintered safely for several winters is no guarantee that it will live through this one, for old stocks are full as likely to be found wanting this spring as any, so we shall be obliged to examine all and feed such as are needy, if we would save them. We can ascertain pretty certainly which need help by carefully turning the hive bottom up, some pleasant morning, and let the sun shine in between the combs. We can easily see any combs containing sealed honey, and can judge whether there is enough to last until flowers. Inexperienced or nervous persons would do well to blow a few whiffs of tobacco smoke into the hive before inverting it if they would avoid stings.

I would not recommend feeding honey or any other liquid food at this season, unless the object is to promote extensive breeding. It is quite certain to excite a disposition for robbing, and this is not all, it must be followed up regularly or the increasing brood making a larger consumption of food they are full as likely to starve as when let alone.

My favorite feed is a hard candy, which I make of a cheap article of sugar (muscavado), which can be bought for about ten cents per pound. I dissolve this in hot water, and boil until a little dropped into cold water will go to the bottom and be hard enough to break readily. I then turn it into tin pans about one-fourth of an inch deep over the bottom, and set them into cold water that they may cool quickly, and avoid graining like sugar again. When cool I break it into pieces of a convenient size to feed at once, and put it away to use as wanted. To feed with this, turn common hives bottom up and drop it in between the combs on to the bees. The bottom board may be secured with a stone upon it that it may not be blown off, and the hive remain thus inverted as long as it needs feeding. In movable comb hives it may be laid on the frames above the bees. This feed does not stimulate breeding, is easily given them, and is not expensive.

Rye or wheat meal should be given to bees on all pleasant days. Put it in shallow dishes near the hives in some place out of the wind, but where the sun can shine on it, and they will eagerly appropriate it. A few pounds given to each hive is worth many times its cost.—*G. W. P. Gerrard, in Maine Farmer.*

For the New England Farmer.

HAY AND STRAW.---No. 2.

Shall more prominence be given to the production of these articles?

The increased demand for hay and straw with us, and the decreased production, together with the expense of bringing them from long distances to our markets, have carried the price up to a high figure compared with the prices obtained for other farm products.

The reason for the increased demand is owing to the number of horses kept in our cities and villages, and to the various uses to which straw is adapted in manufactures, &c., that in the past were comparatively unknown. Many owners of horses will not allow them to be bedded with any other than the nicest flail-threshed rye straw, free of dust. It is also changed as soon as soiled. In this manner large quantities are used up. Our street cars and omnibuses work up a large amount during the winter season. The demand is legitimate and at better compensating prices than other farm products command.

The first question that every farmer will propound to himself when he considers the propriety of giving more attention to these crops is, how can it be done, and the productive capacity of the farm be maintained. I am aware of the *seeming* difficulty there is in the way, and that to many it appears insurmountable. Let us examine the matter and see if there is any serious obstacle after all.

We will make the case an extreme one, so far as keeping up the fertility of the farm is involved. Carry no more stock through the winter than is required to do the *necessary* work of the farm—perhaps retaining a cow to furnish milk for family use. This will liberate capital that can be appropriated to

other purposes—possibly in many cases to paying debts and stopping interest money, a great source of annoyance to many. The labor in the house will be greatly diminished and consequent decrease of expenses there—if not a decreased expense, surely increased comfort to the overworked family; relief from anxiety ever attendant upon the care of stock, especially of late years, when so many diseases prevail that call for the utmost vigilance of our law-power to arrest them, and in many instances in Europe baffling even that. Stable and all *animal* manures are considered to be of universal value. Every description of soil is benefited and made more productive by their application. As we propose to curtail the source of this supply we must look for as near a substitute for it as we can find.

So far as my limited experience goes, it is confirmatory of Dana's theory, as given in his Muck Manual, that three cords of good muck composted with a cask of lime slacked with the brine required to dissolve one bushel of salt, comes as near giving us the constituents and value of good stable manure as can be obtained from any other combinations of equal expense now known, and at less cost than stable manure, providing the muck is not too remote from where it is required to be used. As muck abounds in almost every locality, we have in it the basis for keeping up the fertility of the farm.

An experiment I tried with muck composted with oyster shell lime and ashes was highly satisfactory. It was spread on a meadow in alternate strips of two rods in width with fine stable manure of good quality. The first season after the application there was no perceptible difference between them, but succeeding seasons indicated a decided gain from the muck over the manure. I incline to the opinion that ordinary turf or sward, composted according to Dana's rule for composting muck, will be found a profitable top dressing for grass lands. I should fear to use muck without lime or composting it with stable manures. I have known so many instances of sorrel displacing grass that it is not prudent to use muck without some agent to counteract its acidity. An acquaintance having occasion to ditch through a muck deposit spread the muck taken out over several acres of meadow adjoining. The first season or two he had an immense crop of hay. After that sorrel took possession, and notwithstanding manure was applied lavishly it failed to drive out the sorrel or bring back the expelled herdsgrass. I think that in this case the muck acted at first as a mulch and subsequently its acidity was too much for the grass crop and a perfect jubilee for the sorrel.

Another method of keeping up the fertility of meadows is found in turning over the sod and reseeding. Many soils will require this to be done as often as once in four to six years, by reason of their becoming *sward-bound* and consequently falling off in production. Plough and reseed, and we secure a large amount of feed for grass. Very few are aware of the large amount of vegetable matter made available for crops from this source.

Ploughing in green crops, such as rye, buckwheat, and clover is another practicable and profitable method of not only keeping up the productive capacity of soils, but of increasing their fertility.

It is needless to enumerate all the various methods that can be made available as substitutes for barn-yard and other manures. Every farmer will be governed in his practice by using that which to him seems most expedient under his circumstances.

From the experience of those who have given it a trial, we conclude that by cutting grass in blossom, or before, and suffering the aftermath to remain, not only, a falling off in production in subsequent years will be prevented, but an increased production secured. From the little I have seen of this practice I think the reported results are true. The ripening of the seed exhausts both the soil and the plant, whereas if the grass is cut green, the vigor of the roots is far less impaired, and the aftermath will soon mulch them from the sun's rays and afford a large amount of nourishment for subsequent crops.

If hay is to be sold off from the farm, pasture lands unsuitable for producing it must be stocked up every summer and the animals disposed of during the autumn. Many will consider this as very troublesome. It undoubtedly will be so for a short time, but will soon cease to be the case. Create a demand for any commodity at *stated times*, and you usually find it at hand at the required time. There are localities in New England where farmers have long practiced this method of purchasing stock in the spring. Some of them employ an agent to go West and buy for them. Sheep are picked up there at shearing time and brought here at a cost of from two dollars to two and a half, that in the fall have been sold for from five and a half to seven dollars a head, according to size and condition. None but good *sized* healthy cattle and sheep should be purchased, as the expense of transportation is in favor of the large animal, and the risk not as great of their being injured on the cars. You can lay on two pounds of flesh on some animals with less trouble than you can one pound on some others.

I think it is a well established fact that farmers can make beef with profit only by pasturage. As soon as he commences feeding with grain he begins to lose money. No doubt but some *think* that their pastures will not make beef and mutton; but do they *know* that they will not? Their pastures make milk, keep the oxen, horses, and young cattle, in good thriving condition, and also the sheep; then why will they not make beef and mutton, if the ani-

mals are not turned into too *early* or the pastures stocked too *hard*? There is a class of farmers that year after year carry their stock through both summer and winter on only sufficient food to keep them from starving. With such it is of no use to reason. They are joined to their idols, and we will let them alone.

I have refrained from recommending any of the so called special fertilizers, not because I have no faith in them, but because of their not being universally good in all localities. They have for some time past, and even now are engaging more attention probably than all other manures on the part of thinking, practical agriculturists. They are so persistently thrust into notice by those who deal in them that farmers are almost compelled to give them this attention. If all *soils* and *climates* were essentially alike in all respects, many of them would be of universal value. This is not so, and therefore to this cause we are to ascribe their failure in some localities, while at the same time they are decidedly successful in others. So far then as these commodities are concerned, the part of wisdom is to be governed by careful experiments made *on our own lands* and under careful supervision.

To illustrate the importance of being thus careful in this particular, I will state that my father's farm and mine were three-fourths of a mile apart. On his land, ashes were very valuable, while on mine I could never discover the least benefit from their application to *any* crop. The Lodi Poudrette was a good investment for me, while for him it was comparatively worthless.

These suggestions I do not wish to be looked upon as authoritative, but as hints deserving careful thought, even if not accepted in practice. Should time permit, I may make some suggestions on grass for pasturage and hay, and also on straw and modes of marketing.

April 17, 1871. K. O.

For the New England Farmer.

THE VALUE OF DRAINAGE.

To the Editor of the New England Farmer.

SIR:—It gives me great pleasure to note the zeal with which you commenced the practice of thorough draining, orally and editorially; and as that process lies at the very root of the successful cultivation of the soil, I trust that you may continue its discussion, and that your efforts will have ample reward in the general adoption of your excellant advice.

For the last twenty-five years I have—as you know—had very frequent opportunity of being present at farmer's meetings, and it has really surprised me to hear, time after time, year after year, and decade after decade, men of strong good sense, discuss the merits of deep and shallow ploughing, top-dressing or ploughing in manure, &c., without having an associate favorable word to say concerning what would settle all those questions on a safe and general principle, viz: Thorough Drainage of the soil.

Even if it should startle a majority of your readers half out of their cow-hides, I make, and will uphold, the assertion that there is no description of arable land, however situated, or whatever constituents it may have, that cannot be *profitably* improved by draining. An experience of many years, which included everything from the most tenacious clay to the loosest sand,—the latter, however, merely experimentally,—has fortified my proposition; and it fairly amazes me to be told, as I often have been, by intelligent men on every other subject, that to drain certain dry patches on their farms would be to lay them specially open to the disadvantages of drought which would not assail them in their sodden, undrained condition. Why, sir, agricultural experience has proved, any time during the past thirty-five years, where draining has been conducted in a proper way, that the very opposite results are consequent. But the retention of moisture is not the only benefit on such soils when drained, for drainage permits all manures artificially and naturally applied, to remain in the soil for the fructifying of crops planted upon it, instead of being washed off, or out, of it; and if these fertilizing substances should sink down, drainage renders the soil so porous that the feelers of grains and roots will go deep into it, to almost incredible distances, in search of food and moisture. I once was present at a test of how deep the roots of wheat would penetrate, and they were traced, in directions almost perpendicular, all the way from three feet to five feet four inches. This was proved on the farm of the celebrated Mr. Mechi, of London, and on land that was drained five feet in depth, and, I think, fifty feet between the trenches. Tap-rooted plants will penetrate the soil much farther on the search for food and moisture.

But I do not wish to take up too much of your space just now; however, if you will allow me I will endeavor in due season to furnish you with some practical reminiscences of Scientific Drainage, and its effects, which, I hope, will in some degree illustrate the value of the efforts you have been so laudably making in favor of *the* primary agricultural improvement, draining. A FIRESIDE FARMER.

HOW TO HAVE EARLY TOMATOES.

D. A. Compton of Hawley, Penn., writes to the American Institute Farmers' Club as follows:

Do not forget to tell your agricultural friends that tomatoes on heavy soil may be obtained from four or five weeks earlier than usual by setting the plants on the tops of sharp hills. The hills should be about fifteen inches high and three feet diameter base.

Water the plants only when first set, and dust the plant and whole hill frequently with plaster. The tomato, coming from a hot and dry country, will endure a drouth that would prove fatal to less hardy plants. What it needs most is heat, and this is secured by planting on steep hills on which the sun's rays strike less obliquely than on flat surfaces.

Land should not be over-rich for the tomato, very fertile soils producing too great a growth of vine. The vines should be pinched in, and the blossoms removed after the first settings have attained the size of marbles; but in any case the vines should be permitted to fall directly on the ground, that the fruit may have the full benefit of the heat of the sun and the warmth refracted from the earth. By saving the first well-formed ripe tomato for seed for several successive years, a variety may be obtained that for earliness will be far superior to the original stock.

HIVING BEES.

In a former communication, I alluded to my mode of hiving bees. I will now show how it is done. In the first place, I have a bench three and a-half feet long and sixteen inches wide, two and a-half feet high; also a box a little larger one way than my hive, and five inches high. I nail a strip of lath across the inside, near one side, and even with the top, edgewise, for the hive to rest upon. My hives contain about two thousand cubic inches. My hive is high enough to contain the honey caps in the chamber. I sometimes put some pieces of comb in the top of the under part; this entices them to stay and commence work; but the passages to the honey caps must be covered up by turning the caps over. A part of my hives have frames, and in these I put comb. So, having all ready, I put the hives in the shade, and wait for the bees to issue.

As soon as they cummence coming out I take a few sprigs of lemon balm (bee balm—the small flowered, not the balm with long, red flowers,) and rub the hive inside, and as soon as they alight I set my bench in the shade, as near them as convenient, and put my box on one end and the hive on the other. Then I take the box on one arm and hold it under the bees, and with the other hand shake them into it, then set them on the bench and place the hive over them, a little corner-wise, to give them air, and they will generally go up readily.

But if some linger, take a stick as big as a pipe-stem and stir them up carefully, and they will soon go up, and then can be set on the bottom board. But the hive must not be set down tight; it must be set on blocks half an inch thick, and, if it is hot weather, one inch high. Sometimes, in hot weather, they will come out and alight, or go to the woods. "Well," says one, "they didn't like the hive; or they had a place picked out and would go to it." Not so fast; I had one large swarm come out that way, and I put them back in the same hive and got a pail of cold water from the well and, with a broom brush, I sprinkled the ground about the hive and threw some up in the air and it came down like rain, and so I saved my bees; and so I do with all my swarms in hot weather.

"But," says one, "I can't spend my time in that way. Stop! let me count the cost: A good sized swarm in June is worth $5; in July $2 to $3, and who can afford to lose that amount?"

But I have another way of hiving, some easier than the first named. I have a pole ten feet long, on this I tie some branches from a tree, two feet long, and put it in the shade, and when they begin to come out I take some balm and pound it, and put it on the branches, and hold it up among them, and most of the time they will come to it; but this requires practice. By this mode of hiving I save all my swarms.

Now I wish to say, if any one has a better way, let him show it and I will readily abandon mine.—*A. Wilson, in Rural New Yorker.*

WHAT AN ENGLISHMAN SAYS.

Mr. W. Robson, of London, England, an associate editor of *The Field*, is traveling in the United States, and recently in a letter to *Hearth and Home* expresses himself delighted with the abundance and size of our fruit. He complains of the lack of gardens, and says that he has seen houses in nearly all parts of the country that he has visited, "as bald and bare, and uninviting, from the absence of any trace of a garden, as the flank of any grim sea rock."

Of the American climate he says:—"O, Americans, never blame the climate, for it is an admirable one. The succulent vegetables of the old country grow here, with very few exceptions, and by their side you gather the ears of the stately and graceful maize—most useful of its wonderfully useful family. Musk-melon, better than those which cost an English country gentleman six dollars each to produce in hot-beds and in glass houses, grow side by side with your delicious sweet potato which I used to grow as a curiosity in a hot house.

"Our old popular Williams' pear (you call it the Bartlett), larger, sweeter, and more golden than with us, falls by the side of egg plants, with fruit so large as to be a constant cause of surprise to me who had often grown the fruit to the size of a turkey egg in hot houses in England. Rosy cheeked English apples are seen above the quaint, large flower of the okra, which to us is an impossible exotic. Blessed be every variety of climate, and with its peoples not hedged out from each other's improvements by strange tongues, I look forward to the time when this vast

country shall be more famous for rural beauty than for the wealth of her many cities."

RAISING SEEDLING EVERGREEN AND FOREST TREES.

Many farmers complain—and very justly too, we think, in some cases—that the profits on their productions are too small. How this can be obviated would be somewhat difficult to tell; but how to save some of the money which they do get, can be made clear.

We are acquainted in several agricultural towns, where from one to two thousand dollars have been paid out in each of them, in a single year, for young trees of various kinds. Every one of those trees might have been raised by the farmers of those towns, at a cost not much exceeding the freight on them, from the places where they were grown. A considerable portion of the trees referred to as purchased in these towns were evergreens, and including some forest trees. Almost any amount of these can be raised by any farmer who has a wood lot, and raised at a cost which any thrifty farmer could afford to incur.

Go into the lot and select a spot where the forest trees are of hard wood, pretty large and tall, and where the branches overhead meet thickly enough to screen the spot from the direct rays of the sun. Rake away the dry leaves, and stir the surface a little with an iron-tooth rake. Scatter seeds of the maple, elm, birch, arbor vitæ, pine, spruce, or any other small seeds, and with a slight touch of the back part of the head of the rake, draw a little of the soil over them, not exceeding one-eighth of an inch. This should be pressed down a little, so as to bring the seeds into contact with it.

If seeds of the walnut, peach or chestnut, have been properly preserved through the winter,—that is, kept in moist soil and away from frost,—they may be planted in a portion of the bed and covered about one inch deep. If, however, squirrels are in the neighborhood, they may find and eat them, if not watched pretty closely. The small seeds will not be molested by them. If the seeds sowed are good, they will nearly all come up and grow thriftily. In such a place, they are in their natural habitat; they find a rich soil, one that is easily permeated by their roots, have plenty of light, moisture and air, but are screened by the high, overhanging branches from the direct rays of the sun. Weeds will not be very likely to appear among the young plants, but if they do, they must be carefully taken away. Managed in this way, it is surprising what a number of plants may be produced on a square rod of ground. It is not necessary to sow the seeds of each variety by themselves, but to scatter them indiscriminately over the patch.

Attempts are every year made to raise evergreens and hard wood forest trees in the *open* ground, but usually with very poor success. In the way described above, they may be produced in great abundance, and together with the raising of fruit trees at home, would enable the farmer to retain in his pocket or devote to some other purpose, the *thousands* of dollars which are annually paid out for trees which he can cheaply produce for himself.

NEW PUBLICATIONS.

WHAT I KNOW OF FARMING: A series of brief and plain Expositions of Practical Agriculture as an Art based upon Science: By Horace Greeley.

"*I Know*
That where the spade is deepest driven,
The best fruits grow."—*John G. Whittier.*

New York: Published by the Tribune Association. Boston: A. Williams & Co. 1871. 335 pages, price $1.50.

We may presume that everybody knows that Mr. Greeley published a series of fifty-two essays on "What I know of Farming," in the New York *Tribune* during the year 1870. These essays are now offered in a neat book form, with an introduction, a very full alphabetical index, and the following characteristic dedication:—

To the Man of our Age, who shall make the first Plough propelled by Steam, or other mechanical Power, whereby not less than Ten Acres per day shall be thoroughly pulverized to a depth of Two Feet, at a cost of not more than two dollars per acre, this work is admiringly Dedicated by The Author.

The preface to the volume was written Feb. 3, 1871, the day on which the author completed his sixtieth year, and he closes the book with the avowal of his "joyful trust that these essays, slight and imperfect as they are, will incite thousands of young farmers to feel a loftier pride in their calling and take a livelier interest in its improvement, and that many will be induced by them to read abler and better works on agriculture and the sciences which minister to its efficiency and impel its progress toward a perfection, which few as yet have even faintly foreseen." Notwithstanding all the jokes which have been cracked in agricultural papers at the expense of the author of "What I know of Farming," we have no hesitation in advising our agricultural friends, particularly the younger portion of them, for whom it was more especially written, to read the book carefully. Though they may not endorse all the views of the

writer, they will enjoy his pleasant style of communicating his own thoughts and his happy manner of stirring those of his readers.

The autographic address—"*Editor New Eng. Farmer, Boston, Mass., from Horace Greeley, N. York, Mar. 13, '71,*"—on one of the fly-leaves of our copy shows that Mr. Greeley can write a pretty good hand when he tries, and is the more highly prized in this office because one of our present employees likes to boast of having taken a "stand" vacated in 1832, in a printing office in New York, by "little Greeley,"—as Horace was sometimes called to distinguish him from a larger man of the same name, then connected with the establishment.

AN ESSAY on the Natural Habits and Modes of Destroying the Curculio, by W. B. Ransom, St. Joseph, Mich.

We are indebted to the Benton Harbor *Palladium* for a copy of this essay which was read before the Berrian County, Mich., Horticultural Association, Feb. 25, 1871. Mr. Ransom claims to be the discoverer of the method of checking curculios by trapping and destroying them by placing small pieces of bark, blocks, bits of boards, lath, chips, stones, pieces of bricks, bunches of matted leaves, corn cobs, or anything with a flattish surface from two to four inches square, around the collar of the trees on the ground after making it level and smooth to the distance of three or four feet from the tree. Of this discovery we published some account last year. Mr. Ransom still regards his discovery as a very valuable one, to be used in connection with other means of destroying the curculio. Last year he used nothing but his "traps." He prefers pieces of old dead black oak bark, from two to four inches square, which are slightly concave, with uneven edges, furnishing holes and vacancies for the insect to enter, and the necessary space between the bark and ground for the movement of the beetle. These traps are to be examined daily, and the curculios attached thereto destroyed.

NORFOLK FARMERS' CLUB.—This Club was organized in 1859, with twenty members. It now numbers over two hundred, extending into all the adjoining towns. It holds weekly meetings every Monday evening from Sept. to May; and monthly meetings from May to September. At these meetings various questions of interest are discussed, and much information is gained. It is the most wide-awake organization in the town at the present time. In February last, the Club was reorganized under the General Statutes, (Chap. 66, Sect. 17,) for the purpose of holding property, and the following officers were elected for the year:—

President,—S. E. Fales.
Vice Presidents,—L. S. Keith, J. K. Bragg.
Recording Secretary,—W. H. Rockwood.
Corresponding Secretary,—David Sharp.
Treasurer and Librarian,—Levi Blake.

The Club hold an annual Exhibition and Cattle Show, (not horse trot) every fall with gratifying success, and is an occasion that is looked forward to with interest.

For the foregoing statement we are indebted to the Recording Secretary, who will accept our thanks for his kind attentions.

EXTRACTS AND REPLIES.

RAISING CALVES WITHOUT MILK.

Can you or any of your intelligent farmer readers inform me through the columns of your valuable paper, how and on what calves can be raised when milk is scarce? I have some very fine stock calves that I am anxious to raise, but disposing of my milk in another way, leaves me without feed for them. I think I have read in your columns about a gruel that is sometimes fed them. Can you inform me how it is made, and oblige a

YOUNG FARMER?

Middlebury, Vt., April 17, 1871.

REMARKS.—Milk is the food provided by nature for calves; hence selling milk and raising calves at the same time is something like trying to keep your cake and eat it, too. Still other materials may be substituted for milk, and with proper care and labor calves may be made to grow and thrive. Irish and German women know how to raise calves with little or no milk, and so did the old-fashioned Yankee women. But our chemists who can take things all apart and separate them into their respective pieces or ingredients, have failed in their attempts to put them together again and make a milk on which the young of men and beasts will thrive. Liebig made an artificial milk of what he said were the identical ingredients of good milk, but the babies that were fed upon it for a considerable time starved to death.

From our correspondent's statement we suppose that his calves have taken the first milk of their dams and have probably had more or less of it, either new or skimmed, up to this time, and being well started, he wishes for something as a substitute for milk. Mr. Youatt, an English writer, speaks of hay-tea as being often used. A little good hay is cut into pieces about two inches long, put into an earthen or other vessel, upon which boiling water is poured and allowed to steep, tightly covered, two hours. At first, after the calf is a week old, half milk and half tea is given,—the tea to be increased, and milk diminished, and always given lukewarm. A gruel of two-thirds oat meal and one-third barley meal is made by adding one quart of the mixed meal to twelve quarts of water, boil half an hour, and when cooled till milk-warm, give each calf a quart of the gruel night and morning, gradually increasing the quantity. When the calves are a fortnight old hang a little bundle of the best hay within their reach, which they will soon learn to eat.

Flax seed tea or jelly was used when farmers raised flax. An old farmer told us that ten quarts of the seed would carry a calf to grass. He let them suck two days, then learned them to drink milk, gradually working in the tea, made by putting two-thirds of a gill of the seed into a gallon of

water at night and set it near the fire. In the morning half of this jelly was mixed with two quarts of water for the breakfast and the other half for supper. In case of scouring, feed milk with wheat shorts till well checked.

Mr. J. Bartlett, of Northboro', Mass., wrote to the FARMER that he lets calves suck two days, then feeds new milk six or eight days, then adds a table spoonful of fine feed or middlings, scalded with hot water, mixed with skim milk, and increases the fine feed according to his judgment.

A farmer in Williston, Vt., wrote that he feeds his calves after well started, on whey, clover tea, and about half a pint of dry oats per day, which they eat as well as horses, which prevents scouring.

The above are a few of the suggestions that have been made in the FARMER, and which we hope will be of some use to Young Farmer.

SALT NECESSARY FOR CATTLE.

There are some things which find their way into our agricultural papers which not only do no good but much injury.

When Judge Buel was editor of the *Albany Cultivator*, some individual through the columns of that paper, tried to convince its readers that the use of salt for our domestic animals was entirely needless, and that the taste for it was not natural but acquired. This attempt might perhaps be said to have done some good in one respect, viz.: It set the readers of the paper to thinking, and some of them to trying the experiment of doing without salt, and all who tried it very soon grew "wiser than their teacher;" they very soon knew better. Recently some one else has taken the same view of the case, and published an article on the subject.

I am feeding to fourteen cows, twice a day in their bran, two single handfuls of salt, and find that if the salt is withheld for three days there will be a falling off of at least four quarts of milk each day. In three days more the milk may be increased by the use of it at least four quarts.

REDUCING TOPS OF TREES ON TRANSPLANTING.

Another thing went the rounds of the agricultural papers which did untold mischief, and is the cause even to this time of much loss and disappointment, viz.: the setting out of young trees without reducing the tops. "Why," said the advocates of this theory, "you might as well cut off a calf's head as to cut off the top of a young tree and expect to have it live."

Now the contrary of this theory is true. All trees which are to be transplanted should have the tops reduced very materially, if you would have them live and do well. The maple, especially, should have all the top cut off to within eight feet of the ground, and then if it be well taken up it will be sure to live, and at the end of three years will have more top on than if set out whole. A little digging around the roots and then with a crowbar they may be very easily taken up. It is a great wonder that more of our farmers do not fill their highways with these most beautiful shade trees, both for their own profit and the comfort of the traveller. T. L. HART.

West Cornwall, Conn., April, 1871.

REMARKS.—Questions of the gravest importance are suggested by the remarks of our correspondent who never writes an article without saying something to think of. In this case his observations involve one of the most difficult problems which editors are called upon to solve,—the disposition of opinions and views, offered for publication, which do not harmonize with their own. How far are they responsible for the statements of their correspondents? To what extent are the experience, judgment and knowledge of the editor to bound and limit the expression of the experience, judgment and knowledge of other men? In other words, how far are they responsible as censors of other people's writing? How much shall they abridge the "freedom of the press" for the purpose of preventing the injury they apprehend from the promulgation of error? Who will embody answers to these questions into a rule for the guidance of editors?

As the article against the use of salt has called out the foregoing statement of the practical experience of Mr. Hart in feeding it to his stock, we think the readers of the FARMER will see at least one good reason for dissenting from his assertion that such articles do *no* good. One great object of agricultural papers is to excite thought and reflection. Farmers as well as men of other occupations should be able to give a reason for everything they do,—whether it be feeding salt or trimming shade trees. And if the writings of visionary and mistaken men shall lead us to investigate and discover the truth, the publication of their articles is not unmixed evil.

ALL ABOUT EGGS.

Our hens, thirty in number, laid in January 359 eggs; in February 560; in March 672; in the first sixteen days in April, twenty-eight hens laid 354; making 162 dozen and one eggs in three and one half months. With this note we send you one dozen of our eggs, that you may see the size of them. The dozen weigh 1¾ pounds. That you may have all the particulars, I will just mention that we have kept but one rooster. During the time mentioned we have not lost a hen by sickness. Our poultry are grade Leghorn. E. COOPER.

Winchester, Mass., April 17.

REMARKS.—Thanks for a splendid basket of eggs. Not only for size, color and quality, but for number of eggs produced, Mrs. Cooper's hens are entitled to the ribbon. Last year Mr. Farwell, of Harrisville, N. H., said many of his Brahmah hen's eggs would average twenty-six ounces to the dozen, —our dozen weigh twenty-eight ounces,—equal to two and one-third ounces each,—while many eggs sold in market by the dozen will not exceed one and three-fourths ounces.

SHADE AND FRUIT TREES.

Nineteen years ago I began to set shade trees; not forgetting to add to the orchard and garden, apple and cherry trees. Of plums there was already an abundance. There has been scarcely a Spring since, but that I have set out some trees, either for fruit or shade.

For shade trees, I have set sugar maples principally. I have found the best time to set out maples in this locality is about the tenth of May. I usually leave on a few short limbs, as I think the limbs are not so likely to be broken off by the winds, after the trees have attained a larger growth, as when the branches all spring from a common centre. I have now around my building and by the roadside

one hundred maple trees, which have well repaid the trouble and work of planting, by the refreshing coolness of their shade, and the addition to the looks of the homestead. Besides in a few years I shall have a nice little sugar orchard, easy of access.

With apple trees I have not been so successful. Still I have persevered, and now have a young and thrifty orchard, many of the trees of which I have raised from seed. This may seem a slow process, but I think it the surest way. I used to buy apple trees, a few of which have done well, but generally they have been a failure, though some of them lived long enough to produce some remarkably bitter sweet apples.

I would say to all who have land enough to do so—plant trees. They beautify an already pleasant home. Their shade is pleasant and their fruit good to taste. In short they are a "thing of beauty," which "is a joy forever," and will live and flourish, when he who planted them is mouldering in the grave. W.

Cabot, Vt., April, 1871.

WARTS ON A HEIFER.

I have a heifer that has got what I suppose to be a double wart, some two inches below the ear, each part as large as a common sized shellbark, surrounded by a number of very small ones. Will you or some of the readers of the NEW ENGLAND FARMER please tell me the best way to cure them, and oblige ELLIS BARNES.

Plymouth, Mass., April 3, 1871.

REMARKS.—Some simple application, such as a wash of strong alum water, sometimes seems to cure warts,—we say *seems*, because warts often disappear without any doctoring. A waxed thread or hard cord is often tied tightly about the base or neck of the wart, and occasionally tightened, will cause it to come off. Sometimes the wart is pared down to the quick and some kind of caustic,—nitrate of silver, yellow orpiment, or some other kind—carefully applied.

THE PEA WEEVIL.

Will you or some one of the readers of the FARMER inform me and others interested, through your paper, why it is that my peas, that have been kept through the winter, come out in the spring with the heart of the pea entirely eaten out by some insect or other? The pea is not destroyed for the purposes of reproduction, as it will sprout and to all appearances thrive as well as any other.

I do not always find them in the condition spoken of on the return of spring, but such is the fact in the majority of cases. It may be owing to the time of gathering or the manner and place of keeping during the winter season.

If you, or any one, can enlighten me as to the cause of the evil and give a remedy, you will confer a great favor and oblige A SUBSCRIBER.

Randolph, Mass., April 20, 1871.

REMARKS.—A little beetle, which Mr. Harris calls *Bruchus Pisi*, rather more than one-tenth of an inch long, of a rusty black color, with white spots, wounds the skin of the tender peapod soon after it is formed, and lays an egg directly over the young pea. A little maggot hatches from this egg, perforates the pod and enters the pea by so small an opening as to be scarcely visible, which opening closes over the intruder, leaving a mere spot to mark his entrance. There he eats and grows fat, and if not cooked and swallowed by the lover of green peas, he gets his full growth about the time the peas become dry, but very kindly leaves the germ of the future sprout untouched. The grub is changed to a pupa within the pea in the autumn, and before the spring casts its skin again, becomes a beetle and gnaws a hole through the thin hull in order to fly away and be on hand when peas flower and set their fruit again. These little creatures diminish the weight of peas in which they lodge nearly one-half, and their leavings are fit only for swine.

So much we glean as to the cause of the evil, but it will probably be difficult to find as much by way of remedy. As the time for the operation of the weevil is limited, late sowing has been recommended. Those sown as late as the tenth of June are said to escape the weevil. But late sowed peas seldom do as well as those sown earlier. To destroy the insect in seed peas a little spirits of turpentine has been recommended,—say a two ounce vial full for a bushel, to be sprinkled over them, stirring well, immediately after being winnowed and before being put away for use the following spring.

MILK, OR PUERPERAL FEVER.

I wish to make some inquiries as to what you think was the trouble with one of my neighbor's cows. She calved Sunday last, was taken sick Monday night and died Tuesday night. She was in considerable pain; bloated some. After she died they opened her, and found her manifold quite dry and the appearance of a great deal of fever. The large milk veins were full of clotted blood which would string out some eight or ten inches long without breaking. The milk did not wholly cease to flow until death. The cow was in good condition, and had been fed carefully though not highly. H. W. LORING.

Lewiston, Me., April, 1871.

REMARKS.—Doubtless this cow died of milk fever, commonly so called, but more properly *puerperal* fever, which, in the human female is called child-bed fever.

The symptoms of this disease are a partial or total suppression of the secretions of the bowels, kidneys, skin and udder; intense pain in the bowels, and not unfrequently in the head, which is manifested by great restlessness and irritability, with protrusion of the eyes and tongue; bloating of the bowels, with tenderness of pressure, &c. The cows most liable to this disease are the well fed and plethoric. Says Prof. Law, "This disease is essentially connected with plethoric or excessive formation and richness of blood. Its victims are mainly the cows that lay on flesh rapidly, or those that give an abundance of rich milk. A strong, vigorous digestion, therefore, properties which render their possession so valuable for feeding or dairy purposes, are precisely those which predispose them to this destructive complaint."

To prevent the occurrence of this disease, pursue a course like the following: Keep the animal on a spare diet for a week before and after calving. Have the bowels loose at the time of calving, and

if there is much milk, draw it off clean thrice daily, at first. Give little more than gruels for the first two days, but increase the amount of nutriment by degrees, so that she may have her full diet at the end of the first week.

The treatment of *puerperal* or milk fever should consist of purgatives of Glaubers, Epsom or Rochelle salts; ice bags to the head; damp sheets laid over the body and covered by dry ones; sponging the surface with tepid water; copious injections of warm water; and if the secretion of milk has ceased, warm fomentations to the udder.

Dr. Dadd recommends the following aperient for keeping the bowels in a proper condition. Rochelle salts, four ounces; manna, two ounces; extract of butternut half an ounce. Dissolve the above in three quarts of boiling water, and when cool, give the whole at a dose. J. H. S.

ASHES WITH CHIP MANURE.

In reading your valuable paper, I find that last fall I made a mistake, and now wish to know how to rectify it with least loss to myself. The trouble is this:—Last fall I put into my hog yard some hundred and fifty bushels of rotten chips, &c., and then on the top of them I put some thirty or more bushels of wood ashes, spading the mixture well.

I now learn that I have made a loss on these fertilizers, and wish to know the best method to pursue in their use. I designed the mixture as a dressing for my corn field. Must I be careful about mixing ashes with other manures? Will it always cause an escape of the gases and a consequent loss? Please give me the desired information as the season for planting is at hand. S. T. WATKINS.

Peru, Mass., April 17, 1871.

REMARKS.—If the ashes have driven off the ammonia and other gases from the mixture, we know of no way of enticing them back to the compost. Having been thoroughly mingled with the chip manure we doubt whether the ashes have caused you any serious loss, and hope that the result of your dressing will not disappoint your expectations. We submit your question to the readers of the FARMER who are versed in chemical science, or to those whose experiments have demonstrated the reasons for the general opinion of the impolicy of mixing unleached ashes with manure.

REDUCING BONES.

Last year I collected a lot of bones and reduced them in the following manner. Put them into a large arch kettle or boiler, with an equal bulk of good hard wood ashes; then poured in water enough to make a thin mortar, and boiled the mass from one to two hours, when the bones become completely dissolved or broken down with the exception of a few hard shin bones. The mass was shoveled into a box and allowed to remain a week or so, when the remainder of the bones completely disappeared. Before using, I dried it off with dry loam and plaster, and ground it fine with a hoe. A little was used in the hills of different crops with excellent results.

Now, brother farmers, collect the old bones about your premises and manipulate as above directed, and apply it in the hill of anything you choose, remembering to kick a little soil over it before you drop the seed, and in the fall you will find this receipt worth at least one year's subscription to the NEW ENGLAND FARMER.

Stock of every description is looking well this spring. The prospect for a good hay crop is not very flattering. The new pieces were all killed by the drought last summer or the freezings and thawings of the winter. Grass in the pastures looks quite green, and young sheep and weathers now get their living. Hay sold at auction, April 22, for $17.50 a ton; corn, $1.03; wheat, $1.95, but it was nice seed wheat; cows from $30 to $60; and seven-feet working oxen, $175; Orono potatoes are worth one dollar a bushel; Early Rose, for seed, two dollars.

I am glad the time has come when we can get superphosphate for a reasonable price. I saw Geo. Upton's advertisement of the Brighton Phosphate in the NEW ENGLAND FARMER, and have ordered and received one-half ton. I shall make an impartial comparative trial beside other fertilizers, and give the result to the readers of the FARMER, without fear or favor. S. C. PATTEE.

Warner, N. H., 1871.

TIME TO SET OUT PEARS, QUINCES AND ROSES.

Is the present a good time to set out pear trees? Will it do to transplant quince trees now? When is the best time to set out rose bushes? Would it be profitable for a new beginner to study books on gardening, and which is best? GEORGIE.

Dedham, April 21, 1871.

REMARKS.—If you have not done it before, pear trees, quince and rose bushes may be transplanted the first of May, especially if they were taken up before and the roots kept covered with soil. We think you will find it profitable to study books a little, especially if you practice pretty hard at the same time. Cole's Fruit Book, which possibly you will find in your library, is a good book for beginners. Thomas' Fruit Culturist, a larger book, is also good.

ENGLISH BENT—*Agrostis alba* (?)

Enclosed find specimens of grass which by many farmers here is supposed to be the orchard grass. It ripens between the June grass and redtop. I find it makes good hay, and that it thrives on the edges of reclaimed meadows. Is it the true orchard grass? If not, what is it? LEWIS BEMIS.

Rock Bottom, Mass., April, 1871.

REMARKS.—It is not the orchard grass, but belongs to the same family as the redtop. Being undecided as to the name of the variety we consulted C. L. Flint, Esq., author of "Grasses and Forage Plants." He has little doubt that it is the *Agrostis alba*, or, as it is variously known among farmers, English Bent, White Bent, Dew Grass, Whitetop, Bonnet Grass, &c., but from the absence of flowers, &c., and from the condition of the specimens, which were evidently taken from a mow of last year's hay, he was not entirely satisfied as to its identity.

COOKING FOOD FOR STOCK.

One of the most definite and satisfactory statements I ever met with in print or otherwise, was one recently published in the FARMER, of an experiment on feeding twenty hogs, copied I believe from a western paper.

What I had proposed to say in reference to this important subject, is that boiling corn renders it equal to, or better than meal. I have many times fed to my horse, corn boiled say from fifteen minutes to a half an hour, or until the corn is pretty

well softened. My horse likes it much better than hard corn. Unless a chopped and mixed feed is used, I consider corn boiled, quite equal to, and I believe better than meal for ordinary work. From being clean, there is less trouble and inconvenience in boiling corn than in boiling potatoes.

Blue Hills, Mass., April, 1871. AMERICUS.

MAPLE SUGAR.

The sugar season is now closed and farmers have commenced their spring work. It has been a rich season to those who have worked among the maples. The sap, though not quite as sweet as some seasons, has run freely, averaging nearly four pounds of sugar to the tree, where only one spout is used. We have plenty of rain, with occasionally a flurry of snow on the hills. Grass is starting finely. Sheep could now get their living upon the hills.

PLOUGHING AND HARROWING IN MANURE.

I have been interested with the articles in the FARMER with regard to ploughing and harrowing in manure, and I would like to suggest to the farmers that each one take a piece of land, some where from a rod square to an acre, and manure one-half of it; plough the whole, then manure the other half with the same quantity and quality of manure as the first. Then harrow and plant, or sow as they like, and not only notice which half produces the best crop the first year, but which holds out the best when laid down to grass, and then report to the FARMER. If farmers will try experiments more, and report the results of these experiments, it would be an easy matter to have another page in the FARMER, as has been suggested, like the first. C. M. FISHER.

Cabot, Vt., April 20, 1871.

KILLING FLIES.

A correspondent in NEW ENGLAND FARMER last year gave his experience by burning pumpkin leaves to kill flies, and asks others to report their success or failure by the same method. When I first saw the advertisement I tried it immediately, and as the smoke ascended to the ceiling the flies betook themselves to the floors; but as soon as the rooms were cleared of the smoke the flies directly mounted aloft with all the life and vigor imaginable. The offensive smell of the pumpkin leaf smoke was left behind, and it was several days before we could get rid of it, and it occasioned a deal of trouble in hanging out in the open air clothes, table covers, curtains and other woven fabrics.

JOHN WHATMORE,

Bridgnorth Farm, Dunleith, Ill., 1871.

INCOME FROM ONE SOW.

Joseph Pierce will have to try again. I had a sow that dropped 13 pigs March 1869, raised 10, sold 9 at 4 weeks old for $45.00, fattened one worth $30.00. In September she dropped 13, sold them at four weeks old for $62.00. March, 1870, she dropped 16, lost 8, sold those that she raised for $38.00. In August she dropped 13, sold them for $58.00. Sold the sow in November for $45.00 for a breeder, without fattening her, as Mr. Pierce did his. So you see I am too much for him. Total $278.00. N. HORN.

Barnston, P. Q., 1871.

TREATMENT OF URINE.

Having noticed the inquiry of Mr. E. Williams, of New Hampshire, in relation to the management of urine, I will give my method which is as follows:—I use dry muck enough to absorb the urine, add to that half as much unleached ashes as there was of muck, mix them well together, then add half as much plaster as ashes used, and mix again, when it is fit for use. One handful in the hill, slightly covered with earth before dropping the corn, has done wonders for me.

S. P. GREENLEAF.

Starks, Me., April 25, 1871.

For the New England Farmer.

MAKING MANURE.

In erecting a house, the first requisite is a good solid foundation of stone or some other suitable material. So, in farming, the first requisite is a foundation of good manure. With this conviction, I began on a poor worn out farm, nearly forty years ago. All the stock I could then keep was one pair of cattle and one cow. The first question was, what shall I do for manure to feed my crops? I knew they would not grow without food any more than a child would. I began to look about to see what I could find. There was not much turf on my land, certainly none to spare. So I went to the road, and dug turf beside the fence and drew it to my barnyard. In this way I got quite a large pile.

But I was not satisfied with this, and thought I would put some of this turf into my stable under my oxen and cows, and mingle with it the droppings and urine from the stock. I kept this under cover as much as I could to preserve it from the rains and wind. In a short time I found that the stable floor was becoming rotten, and I concluded I would take it out of the way and not have any floor at all. I did so, and filled up with loam and mud, making a bed on which the cattle could lay comfortably. By working this over in the stable I got another large pile of good manure. With the compost thus made, my crops soon increased so that they filled the whole barn, which was thirty by forty feet, including the old stable, and I built a new stable, thirty feet long on the south side of the barn, without any floor, and with passage-way and doors so wide that I could drive my horse and cart with a load of muck in at one end and out at the other. This stable will accommodate eleven cattle, but I have not as many now.

I fill up this stable with muck about three feet deep, which is covered with loam or turf to keep cattle from sinking into the muck. I begin to stable my cattle about the first of November. After a few days I begin behind the cattle, and dig down to the bottom of the muck or to the ground, and throw it aside for bedding, and fill up the place from which it was taken with the droppings and such portion of the muck as has been saturated with urine. In this way I go through the whole length of the stable, behind the cattle. Then I begin with the muck on which one animal lies, and after removing this, fill up the space with manure, &c., as before. Thus by digging it up every week, the whole is dug over. This process of digging over and mixing the

muck and manure takes about an hour and a half each week,—not much more time than is usually required where cattle are kept on a floor. In this way I make a large pile of strong manure, much more than when I bedded my stock on straw and poor hay. In fact I think I can make as much manure with ten cattle in this way as with forty in the old way. An incidental advantage that may be mentioned in favor of this mode of stabling, is the exemption of my stock from lice, which I ascribe to their lying on the ground or rather on the materials above mentioned.

I endeavor also to convert my horse stable and hog pen into manure factories. I draw up muck and loam and put it in a pile near the horse barn and hog pen, which are connected. I bed my horse first with muck and loam, then with straw or hay or leaves. This remains until it is well filled with the droppings and urine, and is then thrown into the hog pen, where the hogs work it over nicely. This is done almost every day in the summer, and in the winter when it is not cold enough to freeze the muck. This manure is all under cover and away from the rains and wind, and it proves to be an excellent fertilizer for wheat, corn, grass or any plants, for it is very strong, and I am anticipating the best results from a large pile of it now on hand, and more I think than would have been made with ten horses and thirty hogs in the old way, without using material with it.

Now, a few words on the out-door compost factories. I have three yards. One of them is east of the barn, where my cattle run in the winter while drinking and airing themselves, and a portion of the time in the summer. I cover this yard about one foot deep with muck, to begin with. When it is pretty well covered with droppings, I draw in more muck and cover over the surface, and repeat the process, as I deem necessary. Formerly I ploughed and harrowed the yard fine, but from the strong smell that arose I concluded there must be a considerable loss of fertilizing properties, and have not ploughed the yard recently.

The second is at the south end of my barn. This being a little sloping is dryer than the other, and is used as a milking yard in wet weather in the summer. What little wash there may be from this yard runs on to my mowing lot and is not lost. Muck is put into this yard and managed as in the first yard.

My third yard opens into the lane that leads to the pasture. I keep this covered with muck and loam all summer. The muck ought not to be too thick, as the sun and air must have a chance to operate on it to neutralize its acids, &c.

These yards furnish a large amount of compost, which I find valuable for top-dressing for rye, oats, wheat and for seeding down to grass. I find it pays for the labor it requires; and as I have done all this work myself for years—I do not recollect of employing a hand at it for a single day—I ought to be able to know about what it costs.

When I draw my manure to the field, unless I am going to plough it in soon, I step on to the heap with dung hook in hand, and haul on turf and earth to prevent the gases from floating off in the air to come down in a shower on some other farm. I have noticed that the earth thus hauled on to a heap would become yellow, as I suppose from the ammonia or other gases which were absorbed by it.

I have now not far from fifty acres of ploughed land on my farm, without a stone to interfere with cultivation, nearly all of it in one lot. When I purchased it, a piece at a time, it would not yield over six bushels of rye per acre, except about ten acres of new land, which I cleared up, that would yield more. The rest of my farm consists of meadow, pasture and wood and timber land. Since I have taken this way of making manure, I have sold hundreds of dollars worth of hay, and I might say thousands, without exaggeration, and I think my farm is growing better every year.

Early in the spring I commence collecting materials for composting. On thawy days early in March I go into the lot and bring up muck and turf to be used for swelling the manure heap, in the various ways which I have described.

If what I have thus written, which is as near my practice as I can recollect, shall be of any value to any one of my brother farmers, I shall be rewarded for my trouble, though from want of education and habit of using the pen, it is quite an effort for me to write, even with the aid of the editor in the matters of grammar, spelling and smooth language.

M. L. Goodell.

South Amherst, Mass., April, 1871.

Alsike Clover.—At a late meeting of the Orleans county, N. Y., farmers' club, the subject of Alsike clover was alluded to. Mr. Rogers said he mixed seven quarts of the seed with seven of timothy seed, which was sown on four acres. This cut some ten or twelve loads from which he threshed 12 bushels of seed that sold for $12 per bushel. Found the straw good fodder; it is not dusty, and stock eat it up clean. Does not have a tap root, and may not be so good to improve the land as other clover. Says Alsike don't last but one year, and the first crop must he taken for seed, and must be cut green or a large part of the seed may be lost. Thinks it a good crop to raise, and that it will furnish as much feed for one season as other clover.

Mr. Blood don't think Alsike heaves out as bad as common clover, but says it don't do as well on high as on low land. Mr. Beckwith said horses eat it better than common clover. It seeemed to be the general impression that Alsike is not so good to improve the land as common clover.—*Country Gentleman.*

APPLES AND THE APPLE TREE.

LAST year the apple crop was so abundant as to completely upset the theory of some, that the race of apple trees was run, and were never again to be productive in New England. Generally, the crop was a large one, and yet, in some localities, of comparatively small extent, there was hardly a medium crop.

At the time of harvesting, the price they brought was considered low; but those of first quality paid rather better than most crops of the farm. Large quantities were fed out in a cooked and raw state to the animals of the farm,—horses, cows, pigs, and poultry, and did good service in that way in the midst of a very trying drought. Other large quantities were converted into cider, and thus providing that article for the table, and to replenish the stock of vinegar, which had become greatly reduced.

While attending the recent agricultural meetings in the towns of Derry and Chester, N. H., we learned that the apple crop was very large in that region; that those of first quality sold last fall at profitable prices, and that a large amount of cider was made, much of which is still on hand. It was estimated by some of the intelligent citizens of Chester, that about 15,000 barrels of apples were harvested in that town last fall, and that they were worth $20,000. Mr. LUCIEN KENT, of that town, who very kindly took us from Derry to Chester, after the adjournment at half-past nine, of the Derry meeting, informed us that he had within a few weeks purchased in Chester and sold again some $3000 worth of apples for the Boston market. The average price to the producer has been $2 per barrel. The apples grown in this town have been long esteemed for their excellent qualities for transportation, and have been selected as among the best to be exported. Although some forty miles from Boston, they have usually brought twenty-five cents more per barrel than those grown in less than half that distance from that market.

Some time in January, there was a real or fancied scarcity of apples, and dealers went to Chester in search of them. In their early inquiries they were told that a great many apples were harvested last fall, but that the crop had generally been sold at that time. But upon more extended inquiries it was found that nearly every family had laid by a few barrels of their choicest fruit, and that in some instances, from five to fifteen barrels were found, and in one cellar were more than one hundred barrels of number one!

Mr. S. F. LEARNARD informed us that in putting up this one hundred barrels, he found less than a peck of imperfect ones. He gathers them from the first to the middle of October, and takes them from the orchard directly to the cellar. They are then placed in bins, set up a little from the ground, and some three or four feet high and three feet wide. The bin should be tight, with the exception of the top, as a draft of air passing among the fruit causes it to shrivel. The top of the bin is covered with loose boards. He finds that apples in this condition, in a cool cellar and of even temperature, will remain for several months and come out fresh, juicy and crisp, and in fine flavor. He has no difficulty in selling all he can raise at highly remunerating prices. He thinks many apples are gathered too early, and that an important change takes place in the last few days, in the coloring and ripening, which greatly affects their keeping qualities.

We trust our readers will not be discouraged about the apple crop, but will continue to plant trees which will produce the best varieties of apples, when well cared for.

In some recent articles we have called attention to the cultivation of forest trees, and will now add some remarks with particular reference to the trees which produce this leading and favorite fruit of New England.

The skill and care required in taking up and setting out young apple trees in order that they shall live and grow thriftily, does not seem to be sufficiently impressed upon the minds of many who are attempting to rear them.

The selecting a good tree and burying its roots in the ground, is by no means all that is embraced in the work of transplanting. By

placing the plant in a rich soil, and in a favorable locality, by protecting it from enemies and other injurious influences, by suitable pruning and training, and by furnishing to it a bountiful supply of appropriate nutriment, it will develop itself fully, and carry its products to high degrees of perfection. The same principles are present which are involved n perfecting the breeds of animals. Like begets like. By a repetition of the elevating process, by planting and cultivating in the same skilful manner in which we began the seed or fruit of the more fully developed and perfected tree or plant, we shall at length obtain trees incomparably more beautiful and perfect in form and fruit, than the original from which they were derived.

It is folly to attempt the rearing a good orchard with trees that are in any way faulty. Such as have made what growth they have on a poor, starved soil; on a soil that has been too wet; where the trees stood too thickly, or were, from any cause whatever, checked in their growth, become moss-covered and acquired a stunted habit. Such trees are not worth setting out, even if they cost nothing but the setting. It is poor economy to encumber the ground with them. Trees should be grown on a good, generous soil, kept growing throughout the growing season, so far apart in the nursery as to allow them to expand in every direction, and pruned and shaped during their growth, so as to be in proper form for transplanting.

An acre of old pasture, which is too stony to admit of profitable cultivation for grain or grass crops, will be found more favorable for the trees, than smooth soils which have been devoted to the common crops of the farm. The old pasture soil will contain many elements that will give rapid progress to the trees, and their rocks will give out feldspar and other properties which will greatly promote a vigorous growth. When the trees come into bearing on such a soil, the fruit, also, will be found better than on more loamy or sandy soils.

The next step to be attended to in the cultivation of apple trees, is the preparation of the ground. Among good cultivators in England, when trees are to be set in a row, even if they are to be thirty feet apart, a strip of ground about six feet wide, the whole length of the row, is prepared with the spade from eighteen to twenty-four inches deep, and made rich by the addition of compost or marl. On the contrary, in this country, it is common to dig a hole about three feet in diameter, eight or ten inches deep, and throw in a few shovels full of the top soil for the tree to stand on, or if the land is in grass, to place a sod bottom up, under the tree. The cheapest course in the end, is to dig holes five or six feet in diameter, and some fifteen to eighteen inches deep. Throw the top soil on one side and the sub-soil on the other. Loosen the earth in the bottom of the hole with the spade. Throw back the top soil into the hole, level and set the tree upon it in the centre. The hole, six feet in diameter, will now allow ample room to spread out the roots in every direction, and with the greatest ease and facility. Throw surface soil over the roots, and work it down so as to fill all the openings among them. If this is not done, air, warmth and moisture will be likely to cause mould about the roots and destroy them. As to depth, trees should stand about as they grew, when the earth is settled about them. The roots should be placed, so far as is practicable, in the position in which they grew, and at about the same depth at which they had previously stood. The earth should then be gently pressed about them, and the hole filled to a little above the level of the surface,—enough above to allow for shrinkage or settling.

We would not advise to set apple trees upon a soil where water stands near the surface in the growing season. They may live and grow, but will scarcely prove profitable. Some persons occupy such land with apple trees because the location is just where they desire it. They dig ample holes and fill them to within six or eight inches of the surface with small stones, cover with good loam and compost manure, and raise a slight mound around each tree. This moist land, especially if of a heavy character, when thoroughly drained, makes an excellent soil for apple trees. Thirty-five feet apart is as near as apple trees should stand, or thirty feet one way, and thirty-five the other, leaves a good space for teams to pass through.

Every good tree, properly taken up and set as we have described, may be reasonably ex-

pected to live; will grow thriftily and present symmetrical and beautiful forms, and a heavy, rich foliage.

It is estimated that fully one-half of all the apple trees which are set in New England never come to bearing. Some of those even, which are set with proper skill and care, are so much neglected afterwards that they gradually die out. Pruning them is not attended to, or if done, is performed at the wrong season of the year, when the sap runs from them as freely as from the maple in a sugar orchard in March. After a year or two of cultivation, the land upon which the trees stand is laid down to grass, so that they soon lose their vigorous appearance, grow very slowly, become covered with moss and are in just the condition to be attacked by borers, bark lice, and other enemies which infest young trees.

The crowning evil of all, however, is turning cattle into the field where the trees stand. When the fall feed becomes scanty they browse the trees, catching hold of the end of a branch, biting it off, or, if it does not yield, splitting the limb down from the stem of the tree. Then they scratch their oily necks, or comb their shaggy foretops by rubbing against them. We can point to many acres of young apple trees in just this condition to-day.

This is a somewhat expensive operation; one which but few farmers can afford, if indeed, any can. Two orchards are now in our mind, planted about the same time, opposite each other, the highway only dividing them. One of these is in the wretched condition described above, and the other, thrifty and beautiful, and has already returned products which have more than paid all its cost!

BENJAMIN LIVERMORE.—The *Vermont Journal* contains an obituary notice of this gentleman, who died at his residence in Hartland, Vt., April 4, in the fifty-third year of his age. Mr. Livermore was a frequent contributor to our columns, but perhaps he will be best remembered as a writer on the subject of cement pipes and cisterns, to which he had devoted much thought, and in the construction of which he had much practical experience. He was also the inventor of a pocket writing machine, and a little contrivance of his for window flower pots was illustrated in the FARMER last year, —Monthly, page 199. His articles were practical and suggestive, and from a personal acquaintance, we can fully endorse the remark of the writer of his obituary that "he was one who in all the relations of life was indeed a worthy and valuable man."

For the New England Farmer.

HAY AND STRAW---NO. 3.

Varieties of Grasses.

It is highly probable that we are on the eve of radical changes in the varieties of grasses cultivated. Heretofore two or three varieties have monopolized the fields we have stocked down.

Herds grass is the general favorite. Very few other grasses are allowed a test of their qualities. Orchard grass, that has so often been commended by men of good judgment, is not receiving the attention its merits deserve. Clover also fails to win its way to general favor, notwithstanding it is found quoted in English papers at from ten to fifteen per cent. higher than hay. It has no market value with us. It is rare that it is properly cured in our country. To this fact may we ascribe in a great degree the general unpopularity it has attained. No hay is equal to it for feeding sheep, horses, and cows. A large milk farmer of Chicago states that he can obtain fifteen per cent. more milk from a ton of clover than from the same quantity of herds grass. Our farmers differ widely in reference to its value. If in the damp climate of England it can be cured so as to be unobjectionable, I see no good reason why we should fail to accomplish it here.

The new clover from Sweden called *alsike* is attracting much attention. Judging from reports given of it by those who have cultivated it, it is winning its way to general favor. It is thought to possess qualities superior to those of our common red clover. Information respecting it is being sought for through our agricultural papers from every quarter. Since commencing this article I find in the FARMER of to-day (April 8th) a correspondent inquiring for information respecting it and also in respect to orchard grass; there are also two leading articles under the editorial head treating of these grasses, and a correspondent, (A. W. Chever,) gives us his views of orchard grass, &c. You say, in your editorial, that "orchard grass is not cultivated to half the extent which would prove profitable." I think your statement a very modest one, considering the authorities we have to sustain the fact of its being the most valuable grass, both for hay and pasturage, we have. You quote from Mr. Flint's work on Grasses and Forage Plants. His whole article on *Orchard Grass* comprises a mass of evidence in its favor that every farmer should well consider. It is to be found on pages 66–69 inclusive. Judge Buel is referred to as an advocate for its general cultivation. Desiring information from him respecting this grass, he urged my making it my principal reliance for hay and grazing. For the latter, there can be no doubt of its being the most valuable of any of our grasses. In both cases

it would probably be best to put other grasses with it to insure a perfect sward.

Market Value of Straw.

As to the question of raising *straw for market*, I feel that I am dealing with a subject that will probably provoke criticism. Nevertheless I will venture to mention a few facts and give a few suggestions and leave it for others to amplify, if disposed to do so.

A correspondent of yours (Mr. Henry Poor) in his article published to-day on the culture of wheat, furnishes me with a text. One of the reasons he urges for the culture of wheat is the growing demand for straw. I think that is the only argument of much weight he presents for our consideration. Let us see what the figures tell us—for to these we must ever appeal for the solution of about all questions relating to the feasability of our farm operations. Does it pay? is the pivot on which our business operations must revolve.

Not many years since a friend raised 78½ bushels of merchantable corn to the acre on 35 acres. The same season he raised 36 bushels of wheat to the acre on eleven acres. He told me he lost by raising the wheat about $34 an acre, making for the whole eleven acres $372; in other words, he would have been that much more in pocket if he had put in corn instead of wheat. Wheat was worth at the time $2 per bushel and the straw $6 per ton. The straw was estimated at ten tons to the acre. As the straw was threshed with a machine it was unfit for market. Corn was worth at that time $1.25 per bushel and the fodder $20 to the acre, which was the price of a ton of hay. The usual value of corn fodder in the town where it grew was estimated to be equal to a ton of hay to the acre.

We will examine the comparative result. If the wheat had been threshed by flail, and the straw neatly baled and sold at the prices now obtained, and the wheat and corn at the prices named above—viz: $72 per acre for the wheat, and for the corn and fodder $117.82. Adding the present value of baled straw, $40 a ton, to the value of the wheat, and we have $152—thus reversing the results obtained by my friend in his operation. Instead of losing $312, he would have gained that amount, making a difference to him of $744. These figures are startling to us, but how are we to get away from them? Suppose we reduce the price now obtained for straw one-fourth—we have a gain of $558.

It will be said we cannot afford to go back to the old method of threshing and discard the machine. Is any one *sure* this is so? I have often thought it was not, when reckoning up the cost of machine threshing. Suppose you go into a close calulation of *all* the items of expense incurred by using a machine. If you do not own one yourself you pay by the bushel,—board men and teams, furnish hands of your own, &c., &c. When you have got all the items together they will, if I am not mistaken, surprise you. Many reasons might be suggested in favor of threshing with flail that will readily occur to all—not the least of which is that it would furnish work for men desirable to retain, at times when no other profitable employment could be provided for them on the farm.

The quantity of straw that can be obtained from an acre depends of course entirely upon the *character* of the soil, mode of cultivation, and the *skill* of the farmer. No one need expect two tons of straw from a sand drift, a bog, or a clay bank. Even the most productive lands will not do it without skilful management. I have known rye to grow seven feet tall, and a piece of two acres to average over six feet in height, yielding sixty-five bushels of grain, notwithstanding much was wasted by unskilful cradling. I have taken twenty-three bushels of rye and a ton and a half of straw from half an acre of land. I do not think there is much danger incurred by manuring lavishly for this crop. From experience with rye sown on land very highly manured for tobacco, I think there need be no fear of manure harming it in any way. I sowed two and a half bushels to the acre, the beginning of September and ploughed under the first of the following June. The straw was about five feet high and seemingly as thick as it could be. Some of the neighbors estimated the quantity of straw as high as four and five tons to the acre,—none of it lodged permanently. Heavy winds and rains occasionally laid it, but it soon recovered. This treatment was tried two seasons in succession on the same field. Many have since adopted the same method with profit and satisfaction.

Let us suppose we have a meadow we wish to stock anew with grass. Plough it *after* haying, scatter on the manure and some ashes (if they are of use on your land) sow to rye, without being afraid of getting it in too early, for a good covering of the ground is desirable for winter protection. As soon as the grain is *full* (not ripe) cut it, as the straw will be tougher and the grain better. Plough under your stubble, put on more manure—plant to turnips, or, better still, have cabbages ready to set, and if they do well, will make you more beef and mutton than any other crop from the same surface. As soon as this crop is off prepare for the hay seed. Sow any time after winter sets in when there is snow on the ground sufficient to hold the seed. Do not be afraid of losing the seed. It is sure to take if your land is in good condition, and ready to mow as soon as your other hay is out of the way. By adopting this suggestion, hay, straw, grain, and cabbage crops are obtained in two seasons, and the grass crop secured for the third.

It may appear to some to be needless for me to say that in preparing hay and straw for

market, the work should be done in the neatest possible manner, and all of *uniform* quality throughout. Great loss is often incurred by neglect in these respects. Slovenly packages of good and bad qualities intermixed, are difficult to sell, while neat packages of uniform good quality are taken without haggling at much better prices. As an illustration of the working of these two ways of doing things, I will quote the words of one of your editors to me to-day that "over in the market there is butter sold every week as soon as received for $1.25 per pound, while the general price is from thirty-five to forty cents per pound.

Those having to pay freight long distances on bulky commodities cannot afford to send a poor article, as the expense of getting a poor article to market is the same as with a good one. The method of baling was much improved during the war, and the improvement may now be in use. It consisted in compressing an ordinary bale into one-half its ordinary bulk. This end was also attained by the use of the Beater Hay Press which *beat* the hay together as it was pitched into the press—thus getting twice as many pounds in the same bulk as was usual by the old process. The work done by these presses is perfect. I saw a bale of hay in New York that was packed by one of them which was sawed in two and on the ends engraven the name of the press with as much distinctness as if cut in wood. I should think it would be difficult for water to penetrate it. These presses are more expensive than the old ones. A neighborhood might combine and own one for its own use, or the same principle be adopted as is common with threshing machines,—the owners doing the baling for a fixed price per ton. It is possible and highly probable that hay will be in the near future baled in the fields as soon as properly cured. I am also of the opinion that it will not require as much curing put up at once into compact bales as if put into bulk in stack or mow. It would save much in weight and much in quality and value to the consumer. K. O.

April 8, 1871.

For the New England Farmer.

IMPORTANCE OF GOOD SEED.—CULTIVATION OF CORN.

I notice in the FARMER of 25th inst. a communication from K. O. on the importance of good seed, which is a subject that ought to interest all Farmers. I shall pass over his remarks on beets, for that is a crop which I have not raised to any extent. But having given considerable attention to raising corn I agree with him generally in cultivating that crop. First in regard to seed. There are many varieties of corn raised in New England, some of which will yield sixty to eighty bushels to the acre, according to the season; and other varieties which are in favor with many farmers scarcely half as much, with nearly the same cultivation.

Many farmers plant the old varieties that they have raised for a generation, and it is extremely difficult to persuade them that their crops are not about as good as anybody's, though their yield is only thirty-five to forty-five bushels to the acre, rarely fifty bushels. They object to a large variety because, as they say, it has a great cob and it will not get ripe; that it makes a great growth of stover, exhausts the land, &c. Many of them have not learnt that corn stover is worth nearly as much per ton as English hay to feed to stock; and that one acre of corn stover of a yield of seventy-five bushels to the acre will more than keep one 600-pound cow from the time she goes to the barn in autumn till the first of April, with two quarts of shorts a day, and give milk and keep in good condition, but some have learnt it.

Many prefer a smaller kind of corn because it has a small cob, the ears are well filled out, and it makes nice meal, when we all know who have tried it that it is only the large varieties that will produce a large crop, while the smaller varieties will only produce a moderate crop with the same cultivation, and the stover from it will not more than half keep a cow through the winter.

K. O. is correct in regard to the yield to the hill. Four ears is as much as the large varieties will yield and four and a fraction of the smaller varieties. Of the large varieties 200 ears will make a full bushel of corn, but of the smaller varieties 300, or more, are required.

K. O. says he planted a field of 25 acres heavily manured. The term heavily manured is not sufficiently definite for practical purpose. It may be thirty loads to the acre, or ten or twenty more, which would make quite a difference in the cost of the crop. My mode of cultivation is to spread fifteen loads of a thirty-five bushel wagon to the acre of pure stable manure, and put a moderate shovelful in the hill, requiring about twenty-five loads in all. I do not think it economy to use more than twenty-five loads of manure to the acre. From my experience I conclude that not more than one bushel of corn or other grain, or one hundred pounds of hay would be added to the crop for every load of manure above that amount.

I furrow 3½ feet each way, which makes about twenty-five hills to the rod of land, and with four ears to the hill I have a bushel of corn for every two rods of land, making eighty bushels to the acre. My yield last year was seventy-five bushel, a little less than a bushel of corn to two rods of land. I intend to plant five kernels of seed to the hill to make sure of four good stalks. But for some reason my field did not have four full stalks to the hill last year.

It is important to cover the seed carefully, so that the corn will come up straight, and take a good start. If there are stones or coarse earth over the seed, so that it comes up on a slant, it does not grow well, and the crop is injured.

Then I do not plant many pumpkins in a cornfield, for I am satisfied they injure the corn more than they are worth. I have seen a field dressed with thirty-five or forty loads of good manure to the acre, the corn covered in a careless manner, and pumpkins planted in nearly every hill. The pumpkins grew so luxuriantly that they nearly smothered the corn, and the result was a yield of only about forty baskets to the acre, where there should have been nearly twice as much.

My advice to farmers where they buy seed corn is to satisfy themselves in regard to the yield of the field from which it was taken, the amount of manure applied, then examine the kernels, and if the sample ears are not more than nine inches long, you cannot measure more than forty bushels to the acre from that seed. Seedmen cannot always be depended upon. Some of them will not pay an extra price for an extra quality of seed, but buy of a farmer who will sell at twenty-five or fifty cents a bushel above the price of corn for seed. J. H.

Shrewsbury, Mass., April, 1871.

AGRICULTURAL ITEMS.

—At present prices, eggs are cheaper than beef.

—George Wood, of Harrisville, N. H., has made 2300 pounds of sugar from four hundred trees this year, and only one spout to a tree at that.

—There is a curious plant now at the Government green house, in Washington, which closes its palm on anything put on it.

—One blacksmith in Boston has taken from horses' feet two hundred nails which had been trodden upon and buried in the feet of the horses, by being carelessly thrown into the street.

—Including loss from shrinkage, rats and mice, interest on money, &c., a farmer in Ohio thinks it more profitable to sell corn at fifty cents a bushel in the fall, than at seventy cents the next summer.

—George W. Carr, 2d, of Waterford, Vt., has a flock of thirty-five Leicester ewe sheep that averaged 170 pounds each a few days before they begun to drop their lambs.

—The first American rail was rolled some thirty years since. Last year more than 600,000 tons were made, more than half in Pennsylvania, and the rest in New York, Troy, Rome, Syracuse, Elmira and Buffalo.

—A hen belonging to Mr. Abraham J. Borden, residing on the Chase road, Dartmouth, Mass., was recently noticed to move about lazily, and appeared to be very heavy. She was killed, and found to contain sixteen full-sized eggs, half of them having hard shells, and the others partially shelled over, four more about half the usual size, and many others, as is usual in hens, in all stages and sizes. She weighed, after being dressed, two pounds and ten ounces.

—No broom corn is to be raised in Northern Illinois this year, the present ruinous prices having terrified the farmers. The market price is now only from twenty to sixty dollars per ton, and the corn cannot be raised for less than seventy dollars.

—The toad is a great destroyer of insects, and on this account has been found very useful in gardens for exterminating the striped bug, squash bug, flea-beetle, &c. It is very destructive to bees, and should be banished from the apiary.

—It is stated in the *Horticulturist* that one of the most successful cold graperies near Philadelphia has every third section of lights made entirely of blue glass. It is an important fact that colored glass does affect very materially the growth of vegetation beneath it. Thus, blue glass admits the chemical rays, to the exclusion, or nearly so, of all others; yellow glass admits only the formation of luminous rays, while red glass cuts off all but the heating rays. Yellow and red rays are destructive to vegetation; violet, indigo, or blue, are favorable to it.

—Elihs Burnell, of Franklin, N. H., informs the New York Farmers' Club that granite boulders can be split cheaper with fire than with powder and drill. Make a slow fire across the rock in the direction in which you wish it to break; keep it up for one hour, more or less. When the rock begins to heat thump on it with the point of a bar where it is hot, and if it has started a scale, remove it, and keep up your fire as before. The heat will swell the rock near the fire, and if the rock is sound will crack it where it is not hot. Put your ear to it while the fire is burning and hear it crack. One man will break more hard rocks with fire in that way than a half dozen with drills and powder. You need not throw on water, as that will not do the least good.

FARMERS' CLUB.—The farmers of Elvaston, Ill., have formed a club, which in addition to the objects generally contemplated by club organizations, embraces the purchase of such farming implements, fruit trees, and other supplies as may be needed by its members, and also assistance in the sale of produce, stock, &c., by which heavy commissions, &c., will be saved. The constitution and by-laws are published in the *Prairie Farmer*. An admission of fifty cents is required of members. Those who wish to order any implement or other article are required to advance at least twenty per cent. of the probable cost, and full freight, the balance to be paid on delivery. There are to be three regular shipments of implements, yearly. Those having produce, stock, &c., for sale are to furnish the secretary with a statement thereof.

CURING CLOVER HAY.

Taking everything into consideration, and after giving considerable thought and study to the subject, I have concluded that, all things considered, the best plan is to cure clover hay as rapidly as possible. If you chew a blossom you will find it quite sweet. It contains considerable sugar. And this sugar is soluble in water. And yet the heaviest rain falling continuously on a field of growing clover in full blossom will not wash out a particle of the sugar. The sugar is soluble, but the water cannot get at it. But cut down the clover and let it wilt and become partly dry, and the water will then wash out the sugar.

Experienced hay-makers know very well that a heavy rain or dew, falling on clover only just cut down, will not injure it. But rain or dew, falling on a field of partially-cured clover, does considerable damage. And the more the clover has been bruised in shaking it about, the greater will be the damage done by the rain. Bearing these facts in mind, when there is considerable clover to cut, I would start the machine about five o'clock in the afternoon, and cut as long as I could see; and unless there was a very heavy dew, I would start the machine soon after daylight in the morning, and keep on cutting until nine or ten o'clock. By this time the hay cut the night before will need moving. How best to do this is, with me, an open question. Some good farmers do it with a tedding machine. My own plan has been to take a self-acting steel rake, that can be easily raised and lowered rapidly, and pull the clover into small windrows, five or six feet apart. In an hour or so afterward, turn these windrows by hand, and if any of the clover is green and matted together, shake it out.

Treat the morning-cut clover in the same way. And if you have time, turn the night-clover again before dinner; but if not, turn it immediately after dinner. If it has been spread out much in turning, the horse steel rake can be used again to considerable advantage. I have a twelve-year-old boy that does this work with the rake to perfection. The rake is lifted by the wheel, and it is thrown in and out of gear by a lever. He moves this lever back and forth, and keeps the rake going up and down about every second. The object is not to rake the grass together, but to turn it. The oftener the green hay can be stirred the more radidly it cures, and this is the main object of the first day's operations. About three o'clock, pull the hay together into windrows with a wooden revolving-rake, and put it into moderate-sized cocks. At the same time, let the boy with the steel-rake run it between the rows of cocks, and make every thing clean and snug. The next morning, if necessary, turn over the cocks, and spread out any part of the hay that is still green. And it may be necessary to turn the hay again in an hour or so. By one o'clock the hay should be fit to draw in.

The objections to this method are (1), that it takes more labor, and (2) that opening the cocks, if done carelessly, may shake off the leaves of the clover, which, except the blossoms, are the best part of the hay. The advantage is simply a gain of time, and less risk from bad weather.—*J. Harris, in Am. Agriculturist.*

MANURES AND THEIR APPLICATION.

My experience is that manures containing straw, hay and the like should be ploughed under, but those containing little or no straw should be spread on. Coarse manures will rot much sooner if ploughed under, and they also serve to lighten the soil, and this is the one great want of those old farms which have been cultivated many years. Other manures should be applied on or near the surface, first, because if applied in any other way they lose much of their fertilizing properties by evaporation and by wash, while if applied on the surface in small quantities each year, the crops receive all or nearly all the benefit, and second, because the labor of application is much less. Viewing a fine farm burdened with a splendid crop of grass, I remarked to a friend on its fine appearance, that ten years before it was one of the poorest farms in the town, and that two things had made it what it now is. One was, the present owner had built a barn, and with it a large, fine cellar in which he kept his farm manures until he was ready to use them, thereby saving all the solid and liquids, and the other cause was, he applied the greater part of his manures on his grass as top dressing.

I once had a field of grass nearly run out and not able to plough it, spread on about three cords of manure to the acre for three years and now it is as fine a field of grass as one would wish to see.

I have found plaster one of the best fertilizers for grass land on clay loam, but not on sandy soil; and should like to hear the experience of those who have used it on such land. —*W. S. N., in Me. Farmer.*

SPRING CARE OF SHEEP AND LAMBS.

Though our sheep are wintered, the worst time is yet to follow; this is the changeable weather of the spring, the cold storms and the slushy, bad condition of the yard and the places the sheep inhabit. Unless the shed is well drained, or otherwise secured, there will be more or less water soaking the straw and manure. And once made wet in this way, it will be apt to be more or less damp till the end of the spring. We need not say that such is not the place for sheep. Keep the water out on the start by all means, and let there be elevation enough to keep a dry bottom.

Ewes now become heavy, and unless well kept during the winter, will be weak, easily hurt either by cattle or stronger sheep, or fright from dogs or rude boys. The way to avoid all this is to secure a place by themselves. Not only secure the ewes by themselves, with plenty of room if possible and good ventilation, but separate the weaker from the stronger.

When the lambs come weak, then is your time to bestir yourself; an hour at once is worth a day afterward, for the weak lamb, unless it get aid at once, will get weaker rapidly, unlike the strong lambs. See that they get milk, if possible, from the ewes; a little nourishment in the start is a great help, often the saving of the lamb. If chilled too much it must be taken to warmer quarters, where there will also be a chance to feed it. Let the milk (if cow's milk) be warm and a little diluted. Thus, in a few hours from the start, a lamb can be much helped and strengthened.

See to your sheep at night. Many flocks have been lessened in consequence of this neglect. A weak lamb will come in the night, cold and shivering, and in the morning be dead or beyond recovery. We cannot afford such a loss; a lamb is too valuable. The mothers also must have good care. Continue good hay to them. We prefer clover cut in due season and well cured. A little grain, almost of any kind, say a pint a day, is of material help. A few roots, for variety, are greatly relished. Do not fatten, but feed so as to strengthen and flesh up well, and prepare for the spring pasture. We should say summer pasture, for we are apt to let our sheep have the range of the fields too early, when the season is yet uncertain and damp, the ground soft and moist, and the feed too tender and innutritious for much benefit. The hay and the grain should not be cut off till pasture is fully established and feed abundant, and then not at once.

The thing is undeniable that good care and treatment, with food sufficient, will improve the wool and give more strength and growth to the lambs, preventing measurably the shedding of wool and other difficulties depending upon a reduced system. Remember a well conditioned sheep does not require more food than a poor one. And now, during this changeable weather, is the time to take care of the flocks.—*Utica Herald.*

DESERTED PLACES.

In the eastern part of the central portion of Windham county, Vt., about six miles west of the Connecticut river, and running nearly parallel with it, is a long range of hills, or rather one continuous hill, stretching from Dummerston to Rockingham, a distance of twelve or fifteen miles, and rising from the valley on either side from one mile to three. From the summit is an extensive view, reaching far into New Hampshire on the east, and revealing for more than fifty miles on the west, the prominent peaks of the Green Mountain range. The hill attains its greatest height between the towns of Putney and Westminster on one side, and Brookline on the other. Scattered over it and along its declivities are the deserted homes of a former generation. In every direction we find the relics of an ancient household; a few decaying timbers, an old cellar and the crumbling walls of a massive stone chimney. The abandoned farms are turned into out pasture for sheep and fattening cattle. On some of them the houses are still standing, and the sheep lie on the stone hearth and the kitchen floor.

A former resident of Putney, an octogenarian and an old school teacher, says that when a young man, he taught a school in one of the districts on this hill, of seventy scholars. In this district there is now no schools, no scholars and only two houses inhabited. In another district adjoining, in which there is not a single house now standing, he taught a school of sixty scholars.

It is painful to think how many long days and years of labor have been expended on these deserted homes. Here are huge stone walls inclosing nearly all the fields, standing now after their weight has pressed the earth for more than half a century, as high as a man's shoulders. And like heavy old fences enclose the old roads that wind up the hill—old roads never to be traveled more. In winter, the piercing winds that sweep here with fury, pile the snow in those old tracks, and it lies undisturbed.

The lands that have been described are but a type of the condition to which many of the rough places of New England are approaching. Half the towns of Vermont have similar deserted tracts. The bleak hills are abandoned, and residences are sought in more accessible places in the valleys or near the villages. While many towns have a smaller population than in 1850, the villages in the same towns have often doubled or trebled in size since that period. A town in this county that has lost thirty per cent. of its population since 1870, has two considerable villages that have grown up while the town has been losing this per centage of its inhabitants. The gain in the State of 15,000 shown by the recent census, is nearly made by the towns of Rutland, Burlington and St. Albans. If we compute the gain in Brattleboro', St. Johnsbury, Bennington, and numerous small villages scattered through the State, it shows a loss in the agricultural districts. Estimating the increase in all the villages in the State at 45,000, and deducting 15,000, the gain in the whole State, a loss is shown in the remainder of the State of 30,000. This estimate of the loss, outside of the villages, is believed to be less than the facts will warrant.—*Cor. New England Homestead.*

CULTIVATION OF ONIONS.

When grown as a field-crop, the land should be level, comparatively free from stones, or other obstructions, deep and mellow. The onion will grow best on such a soil when well drained, either naturally or by artificial means. Fall ploughing, throwing the land into twelve-feet ridges, is advisable. In the spring an application of twenty to thirty two-horse loads of well-rotted yard or hog-pen manure, are spread broadcast and ploughed under. The ground is then ploughed, harrowed and sometimes levelled with a wooden roller before sowing the seed. An application of two or three hundred pounds of ground bones to the acre will benefit the crop.

The seed is sown in drills, one foot apart, either for field or garden, by a machine, using four pounds of fresh seed to an acre. To insure the seed being well covered, a light roller is drawn by hand over the ground, in the directions of the rows.

The early running of the hand-hoes between the rows, is the only way to do in growing onions for profit. If the weeds gain headway, the cultivation will cost ten times what it otherwise would. As soon as the rows are designated by the young plants, keep the scuffle and onion-hoes active until the tops are large enough to give shade. Weeds appearing in the lines of the rows must be removed, before they attain any size, by hand—the boy carrying a knife with a curved point, made for the purpose. The seed sown early in April, the crop will be ready to harvest in the latter part of August or the beginning of September. The onions are pulled out by hand, throwing three or four rows together and leaving them in this way for a few weeks, until they are dry enough to be stored—when they are gathered, carted and placed on a barn floor or loft until marketed. If kept over winter, they should be protected by a covering of straw or salt hay, before cold weather sets in. Onions keep better with the tops left on, therefore they are not trimmed till a few days before sending them to market.—*Quinn's Money in the Garden.*

A VALUABLE FERTILIZER UTILIZED.

Every farmer has the means at hand of manufacturing, at small cost, one of the most valuable fertilizers in use from the contents of the privy, that are too often nearly lost on account of their offensiveness or want of proper knowledge. If the term, fertilizer, at the head of this article is suggestive of adulteration, all fears of this kind will vanish after a fair trial.

Early in Spring make a curb of proper size under cover, and place in the bottom a layer of dry muck six inches deep, or in its absence soil will do and may be advantageously taken from the marginal elevations of ploughed fields. Upon this place a layer of the said contents two inches deep, and thus build up the pile in alternate layers, using two or three times the quantity of muck, covering the whole with it to the depth of ten inches. Now save all the liquids from the sleeping apartments through the Summer and pour upon the top, adding more muck as may be necessary. In one year this will be fit for use, well decomposed, free from offensive odor and may be handled as well as so much earth. I have used this compost in top dressing grass lands with marked results. Last Spring a piece thus treated was far ahead of the rest and had to be cut ten days in advance. A small quantity in corn hills will push the young plants forward, give them a rich, dark green color and a stamina they will not forget during the season.—*Vt. Farmer.*

PREPARING CORN GROUND.—A correspondent of the *Ohio Farmer* says, always, if possible, plough the ground just before planting. If sod, never until the grass is well started. Then the grass will furnish food for worms, and also commence heating or rotting at just the right time to make the young corn grow rapidly. How to plough:—If your land lies high and dry, and you wish to plant in hills, and rows both ways, commence in the centre of the field and back furrow until finished; thus you avoid tramping upon any of the ploughed ground. If low ground, plough in beds, north and south, wide enough for five or seven rows of corn, one row on the ridge, two or three on each side dropping the corn at the edge of every fourth furrow in drills, with plenty of seed, then harrow the ground thoroughly; as soon as the corn is up harrow again. Then in a few days cultivate and thin out to suit. I plough sward land from five to six inches deep; old land seven to eight inches.